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THE INSTRUMENTAL-EXPRESSIVE DICHOTOMY
IN SCHOOL STAFFS

by

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A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES
IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE
OF MASTER OF EDUCATION

DEPARTMENT OF EDUCATIONAL ADMINISTRATION

EDMONTON, ALBERTA

OCTOBER, 1966

UNIVERSITY OF ALBERTA .
FACULTY OF GRADUATE STUDIES

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Expressive Dichotomy in School Staffs" submitted by
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ABSTRACT

The main purposes of this study were to examine the difference between the instrumental structure and the expressive structure of school staffs and to identify correlates of this difference or dichotomy. The instrumental structure is the pattern of interaction which characterizes activities within the group that are directed toward the achievement of the group's goals. The expressive structure is the pattern of interaction which characterizes activities within the group that are directed toward satisfying the needs of the group itself, including the needs for norms, socialization, emotional outlets, and group continuation. The instrumental-expressive dichotomy is a well documented concept that has been noted by researchers in most of the behavioral sciences.

Data were collected by means of a questionnaire, partly sociometric in nature, administered to eighteen schools with 389 teachers. The data were punched on Hollerith cards and analysed with the aid of a computer.

It was concluded that the instrumental-expressive conceptualization is useful for studying school staffs; individuals within school staffs discuss matters related to teaching and the school with persons different from those with whom they socialize. The positions of teachers in the instrumental and expressive structures was found to correlate with certain personal characteristics. Female teachers showed a greater similarity between their instrumental and expressive positions than did male teachers. They also exhibited a more accurate perception of their positions in both structures than did males. Persons with less teacher education showed a greater similarity between their positions in the instrumental and expressive

structures and a more accurate perception of their positions. Years of teacher education and sex were highly correlated, and this study did not separate their effects on the sociometric variables.

It was found that the greater the difference between a person's position in the expressive structure, the greater was his desire for increased salary. This supported a hypothesized relationship between the instrumental-expressive dichotomy and what was termed calculative involvement.

An analysis of the sources of variance of nonsociometric measures revealed that teacher estimates of school and principal effectiveness tend to be unreliable because of the lack of consensus of teachers concerning the effectiveness of their school and their principal. From this it can be deduced that teacher estimates of school and principal effectiveness tend to be invalid and should not be used as an estimate of actual effectiveness.

This study has demonstrated that the sociometric technique is useful in studying school staffs. It has pointed the way to further research in this area including the use of vector analysis to examine social relationships in organizations such as schools.

ACKNOWLEDGEMENTS

The writer wishes to acknowledge the valuable advice and guidance given throughout the course of this study by Dr. Erwin Miklos, the supervisor of the thesis. Thanks are also extended to the other two members of the thesis committee, Dr. MacKay and Dr. Worth.

Appreciation is expressed to the school staff members who gave of their time to answer the questionnaire which provided data for this study.

The writer would also like to thank the staff of the University of Alberta computing center without whose assistance the massive amount of data involved in this study could not have been analysed.

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CHAPTER I

INTRODUCTION

The important influence that person-to-person interaction in small groups has on the behavior of the individual has been recognized by researchers in the social sciences. Recently, students of school administration have examined the interaction that takes place within schools among members of the teaching staffs. Numerous attempts have been made to classify this behavior according to some empirically useful categories. One of the most successful of these classifications has been the formal-informal or instrumental-expressive dichotomy.

The instrumental structure of the group, sometimes called the task-oriented structure, is the pattern of interaction which characterizes activities within the group that are directed toward the achievement of the group's goals. The expressive structure is the pattern of interaction which characterizes activities within the group that are directed toward satisfying the needs of the group itself. These include the needs for norms, socialization, emotional outlets, and group continuation.

Statement of the Problem

This study examined relationship between the instrumental and expressive structures within school staffs and analysed variations in the perceptions of these structures. The technique used was sociometric in approach and the theoretical framework was provided by Etzioni (2). The sociometric measures were checked for possible relationships with a number of teacher and school variables. These variables included the

level of teacher satisfaction with the school and teaching, the estimated effectiveness of the principal and of the school, the motive for a teacher teaching, and personal variables such as age and sex. The variables were checked to determine if the mean variance within schools differed significantly from the variance among the school means.

Subproblems

The subproblems fall into two main categories: (1) those concerned with definitions of sociometric measures and with their interrelationships and (2) those concerned with empirical problems involving these measures.

Sociometric Measures. Precisely defined sociometric measures of perceptions of the instrumental and expressive structures and of the relationship between the two were necessary. These measures had to be numerical in nature and amenable to empirical determination. At the school level the three necessary measures were: (1) perception of the instrumental structure, (2) perception of the expressive structure, and (3) of the relationship between the instrumental and expressive structures. Measures of the misperception of the instrumental and expressive structures were also necessary at the individual level; however, two measures of the relationship between the instrumental and expressive structures are possible at the individual level. One was derived from an individual's own responses and one from the responses others made of him. The former refers to the relationship between a person's place in the two structures as he perceived it and the latter as the other staff members perceived it. Thus, three measures are necessary to describe the social system of the school and four to describe the individual components of the social

system. Once these measures had been determined empirically, their relationships with each other were considered. Relationships between measures and their relatedness to other variables offered some indication of their usefulness.

Empirical Problems. Before analysing the relationship of the school and individual variables to personal and attitudinal variables, the relative importance of the school versus the individual was determined by locating the major source of variance.

The main subproblems were as follows:

1. What is the relationship between teachers' motives for teaching and the degree of similarity of the instrumental and expressive structures in schools?
2. What is the relationship between the effectiveness of the school and the degree of similarity of the instrumental and expressive structures?
3. What is the relationship between the satisfaction of teachers with teaching and the degree of similarity of the instrumental and expressive structures?
4. What is the relationship between the satisfaction of teachers with the school and the degree of similarity of the instrumental and expressive structures?
5. What is the relationship between the effectiveness of the principal and the degree of similarity of the instrumental and expressive structures?

6. What personal characteristics of teachers influence the relationship between the instrumental and expressive structures in schools?

Significance of the Problem

Increasing recognition has been given to the importance of the social organization of schools since Barnard (1, pp. 114-23) pointed out the existence of an extra-legal structure in organizations. Some research has since been done on socialization among students in schools but the literature available on school staff interaction consists mainly of common sense statements and opinion. The development of the sociometric method and the application of computer techniques to the analysis of sociometric data have helped to put the study of school staff interaction on a more objective basis.

Etzioni (2) has recently made a comparative analysis of organizations. He was able to incorporate schools into his theory. His book draws heavily on research into organizations to develop a theoretical structure; however, this structure is incomplete and uncertain in a large number of areas. One of these areas is the public school, where the motives for being involved with the organization exhibited by the various organizational members, or actors as Etzioni calls them is either unclear or completely unknown. This study examined these motives and their relationship to the instrumental and expressive structures and other important variables. Factors which may be amenable to modification by administrators are dealt with and clarified.

Limitations of the Study

The primary set of limitations of this study is that which accompanies any study based on sociometric techniques. Sociometry does not record actual association nor does it describe actions. It only records what people write, and it imposes strict limitations on what they write. The responses to the questionnaire represent conscious opinions deliberately presented to an outsider and do not reveal the complete structure of the group.

The difference between the operational definitions used in this study, which are necessarily arbitrary, and the commonly accepted definitions represent another limitation of any empirical study. Equating stated desire for higher salary with level of calculative involvement is an example of this.

Finally, few if any samples where respondents are included voluntarily are truly random. This one is no exception. Some schools refused to participate in this study and others failed to reply to the initial letter requesting cooperation.

Delimitations

This study was undertaken in North-central Alberta and involved schools with more than twelve staff members located in rural areas and small urban centers. In each school the questionnaire was administered only to those staff personnel actually working in the school.

Overview of the Thesis

This chapter has outlined the problem in a general way and defined

important terms. Subproblems, limitations, and delimitations were presented.

In Chapter II the instrumental-expressive dichotomy is defined in detail by reviewing the literature from the many disciplines in which it has been noted. It is dealt with as a phenomenon of the small group and the complex organization.

Chapter III includes basic theory, definitions, and hypotheses.

Chapter IV begins with a brief description of the questionnaire and a statement of the means used to involve schools in the study. This is followed by a brief description of the sample and a detailed and rigorous development of the methodology.

Chapter V contains the results of the study including analysis of the data for the hypotheses.

Chapter VI, the final chapter, gives conclusions, derived from the results, implications for educational administration, and suggestions for further research.

REFERENCES FOR CHAPTER I

1. Barnard, Chester I. The Functions of the Executive. Cambridge, Mass.: Harvard University Press, 1938.
2. Etzioni, Amitai. A Comparative Analysis of Complex Organizations. Glencoe, Illinois: The Free Press, 1961.

CHAPTER II

REVIEW OF THE LITERATURE ON THE INSTRUMENTAL-EXPRESSIVE DICHOTOMY

This chapter attempts to present the instrumental-expressive dichotomy as it relates to small groups and organizations and to show its relevance to the school staff. The preponderance of citations in the small group area and their relative paucity in other areas are a reflection of the relative amounts of research done. In particular, the dichotomy has received little attention from those studying schools.

The Social Organization of the School Staff

The study of the school as a social system is relatively recent. Basic assumptions upon which research related to the social organization of schools can be based are outlined by Jensen (26). By means of a logical analysis of the work relationships in schools he identifies six phases. These are the formal work structure, the authority structure, the communications structure, and the informal and clique relationships. Charters (15) discusses social interaction in the school in terms of role, leadership and authority, communication, interaction analysis, and informal groups; but he is not able to reach any conclusions. Charters' article contains an extensive bibliography but most of his references are not related to the school.

One of the first examples of actual research done on the school as a social system was by Boyan (11) who made an intensive study of a single school staff by means of questionnaires, interviews, and observation. The elements isolated for investigation were (1) the activities and inter-

actions -- formal and informal -- in which the staff members participated, (2) the factors which patterned these activities and interactions, and (3) the evidence of interplay between the formal and informal systems. Boyan concluded that the impact of the informal organization results in some modification of the official organization. He believed that a relationship existed between the informal organization and the willingness of the staff to accept changes in task requirements.

The concept of the formal and informal systems put forth by Boyan approximates that of the instrumental-expressive dichotomy. Nevertheless, no research has been done on the dichotomy itself in school staffs. The remainder of this chapter presents the results of research on the instrumental-expressive dichotomy in small groups and organizations including some done on the school classroom.

Basic Research on the Dichotomy in Small Groups

Bales' Model of Group Interaction. Bales (4) has originated a model for the classification of small group interaction. Observers classify all communication in the group as belonging in one of twelve categories. The model is explained in detail in a book by Bales (2) which also covers observer training, statistical analysis and other topics relating to it. As the illustration on page 10 shows, it is based on six problems of groups and four areas of interaction, two of which are instrumental and two expressive.

Using Bales' set of interaction categories (4) to classify the remarks of group members, Slater (34) identified two types of leaders in small problem-solving groups. He termed these idea men and best-liked

Problem Areas:

Observation Categories:

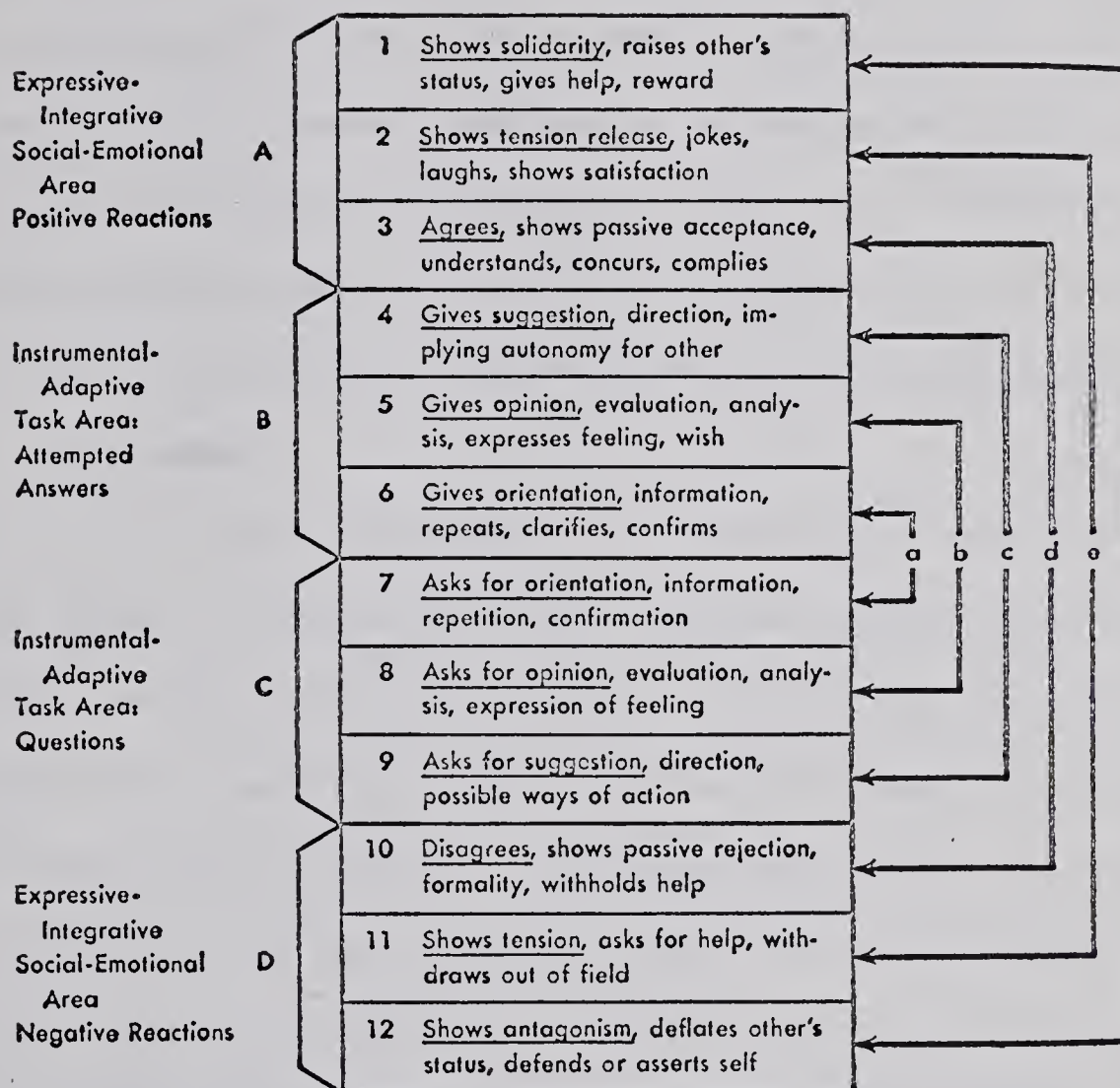


Figure 1. Set of categories used for direct observations of the interaction process.

A subclassification of system problems to which each pair of categories is most relevant:

- a Problems of orientation
- b Problems of evaluation
- c Problems of control

- d Problems of decision
- e Problems of tension-management
- f Problems of integration

(adapted from 4)

men. The idea men were characterized by a tendency to initiate interaction in Area B of Bales' model (Instrumental-Adaptive Task Area: Attempted Answers) while the best-liked men initiated interaction most frequently in Area A (Expressive-Integrative, Social-Emotional). As the name suggests the best-liked men were the most popular in the group, whereas the instrumental leader, the so-called idea man, was often only moderately well liked. However, when asked to designate who the overall leader was, the group's usual choice was the idea man. Slater noted that in a few rare cases one person filled both leadership roles. He believed this rarity due to incompatible task requirements and incompatible personality requirements.

Bales (5) had observers classify and record the interaction of task oriented groups. Members were asked who they thought contributed the best ideas, provided the best guidance, and who they liked the best. When the results were tabulated they found that, although the guidance and best ideas curves were very close, the highest men on these measures were not the best liked. When the men were rated on amount of participation it was found that those who rated second in participation in their group were quite low on guidance and ideas but were the best liked members. The top participator rated highest on guidance and ideas but only average on being liked. Bales concludes that movement in the instrumental direction tends to upset the equilibrium of the system and recovery mechanisms must restore it. The centering of positive sentiment on a secondary man is a mechanism by which the solidarity of the group can be re-established.

The experimental set-up and results in a study by Bales and

Slater (6) were similar to one by Slater (34) already described. In this experiment they concluded that a certain amount of ambivalence tends to center on the task specialist. The investigators state:

He tends to be liked because he is satisfying needs in relation to the task area. But he also tends to arouse a certain amount of hostility because his prestige is rising relative to the other members, because he talks a large proportion of the time, and because his suggestions constitute proposed new elements to be added to the common culture, to which all members will be committed if they agree. Whatever readjustments the members have to make in order to feel themselves committed will tend to produce minor frustrations, anxieties, and hostilities. These are centered to some degree on the object most active in provoking the disturbances -- the task specialist.

The more the task specialist talks, the more ambivalent the attitudes of other members toward him presumably become, and as a solution, they tend to withdraw some liking from him and center it on some other person who is less active and may in some way reciprocate their positive affect or express their negative affect. (6)

Benne and Sheats (8) identify three types of roles played in groups: group task roles, group building and maintenance roles, and individual roles. Individual roles involve behavior that satisfies the personal needs of the individual and according to the definition of the authors are dysfunctional for the group. Both group task roles and group building and maintenance roles are functional.

Socio and Psyche Groups. Jennings (25) distinguishes two types of small groups: the socio group and the psyche group. In the psyche group there is no visualized goal, while in the socio group that is an essential characteristic. In the psyche group there is an informal structure, with little in the way of rules and regulations. The members of a psyche group are usually voluntary members. The purpose of the psyche group, although it is rarely made explicit, is to satisfy the emotional needs of the group members; whereas the purpose of the socio group is to reach the

visualized goal of the group.

Starting with Jennings' distinction between the socio group and the psyche group (25), Coffey (16) integrates the two by referring to them as processes rather than groups. They represent separate ends of a continuum of group process. The psyche group and the socio group rarely exist in pure form, for most groups are a mixture of these two elements. One example of an almost pure psyche group is a therapy group because it never has external goals in the socio group sense.

Initiating Structure and Consideration. In describing the two dimensions of consideration and initiating structure in interaction, coined by Hemphill and Coons (24), Halpin (22) has this to say:

High positive loadings on the Consideration factor are associated with behavior indicative of friendship, mutual trust, respect, and a certain warmth in the relationship between the airplane commander and his crew. High negative loadings appear on items which suggest that the commander is authoritarian and impersonal in his relations with members of the crew. Consideration thus refers to the extent to which the airplane commander, while carrying out his leadership functions, is considerate of the men in his crew.

High positive loadings on the Initiating Structure factor occur on items which imply that the airplane commander organizes and defines the relationship between himself and the members of his crew. He tends to define the role which he expects each member of the crew to assume, and endeavors to establish well-defined patterns of organization, channels of communication, and ways of getting jobs done. (22).

These two dimensions are found in the Leader Behavior Description Questionnaire which Halpin administered to crew members of aircraft. He found a trend toward positive correlations between superior ratings of effectiveness and initiating structure and between crew satisfaction and consideration. It should be noted that the intercorrelation between initiating structure and consideration was reported to be .45.

In a study conducted in Alberta schools by Keeler (28) using the Leader Behavior Description Questionnaire (24), a significant positive correlation was found between the initiating structure exhibited by a principal and school productivity or effectiveness. No significant relationship was found between the principal's consideration and school effectiveness.

The Dichotomy in Organizations

Within the Organization. Caudill (14) identifies overt and covert emotional structures of a psychiatric hospital. He associates the overt structure with cognitive communication and the covert structure with affective communication. Caudill also attempts to relate this to the two lines of authority present in the hospital: administrative and therapeutic.

Barnard (7) talks about formal and informal organization in large bureaucracies. He says that:

. . . informal organization is essential to formal organizations, particularly with reference to communication. This is true not only of the organization as a whole, or of its ultimate subordinate units, but also of that special part which we call the executive organization. The communication function of executives includes the maintenance of informal executive organization as an essential means of communication. (7, p. 224).

One of the indispensable functions of informal organizations--that of communication--has already been indicated. Another function is that of the maintenance of cohesiveness in formal organizations through regulating the willingness to serve and the stability of objective authority. A third function is the maintenance of the feeling of personal integrity, of self respect, of independent choice. Since the interactions of informal organization are not consciously dominated by a given impersonal objective or by authority as the organization expression, the interactions are apparently characterized by choice, and furnish the opportunities often for reinforcement of personal attitudes. Though often this function is deemed destructive of formal organization, it is to be regarded as a

means of maintaining the personality of the individual against certain effects of formal organizations which tend to disintegrate the personality. (7, p. 122).

Argyris draws some of the same conclusions as Barnard, and these may be crucial to an understanding of informal organization. Note the similarity in meaning between the words of Barnard (7), "disintegrate the personality", and the words of Argyris (2), "simplify him as a human being". Argyris (2) reports that successful foremen do not interfere with the informal employee culture. Foremen are told by management that they will be considered successful to the extent that they maintain high production, low grievance rate, and low absenteeism. The informal organization dictates that the employees will maintain these management objectives if the foreman respects the norms of the employee informal culture, that is, let the employees alone but make sure their jobs are secure and wages adequate. This unwritten contract between foreman and employee keeps the two socially distant, greatly simplifies the job of the foreman, and, according to Argyris, may simplify him as a human being.

Kahn and Katz (27) have reported findings which are not entirely in accord with the instrumental-expressive split noted by others. They found that, although effective supervisors in a number of organizations played more differentiated roles (different from their subordinates) than ineffective ones, effective supervisors were employee-oriented rather than institution-oriented. They were more understanding, supportive, and personally interested in their subordinates than ineffective supervisors. The employee-oriented supervisor identified with the employees, but did

not supervise them as closely as ineffective ones.

Leighton's (29) observations in a Japanese Relocation Camp during World War II tend to support the findings of Kahn and Katz. They represent almost a reversal of the instrumental and expressive roles found so far. Leighton classified the American staff members in the camp into two clearly identifiable groups: "people-minded" and "stereotype-minded". The people minded staff looked upon the Japanese inmates as individuals, identified with them, and were effective in dealing with them. The stereotype-minded staff saw the inmates as a group, identified with the United States government, and were generally unsuccessful in eliciting the co-operation of the inmates. Leighton found that the stereotype-minded staff were less well educated and held lower positions in the hierarchy than the people-minded staff. The higher positions seemed to be held by expressives and the lower ones by instrumentals.

Types of Organizations. Gordon and Babchuk (20) classify voluntary organizations on three dimensions. The three categories in the goals dimension are "Instrumental," "Instrumental-expressive," and "Expressive". an instrumental organization exists to influence society in the creation or maintenance of some normative condition. An expressive organization exists primarily to furnish activities for members. Instrumental-expressive organizations have both these goals as primary objectives. An example of An instrumental organization is the Ku Klux Klan; of an instrumental-expressive, Alcoholics Anonymous; and of an expressive one, the Young Men's Christian Association.

Etzioni (17) has classified all organization as either coercive,

utilitarian, or normative according to the type of compliance accorded them by their lower participants. In coercive organizations such as prisons, the instrumental and expressive leadership are completely separate; the former residing with the prison staff and the latter with the prisoners themselves. This is a consequence of the prisoners negative or alienative attitude toward the organization. Utilitarian organizations have an expressive or informal structure separate from the legal or instrumental structure which will support the instrumental structure if the lower participants are committed or oppose it if they are alienated. The expressive and instrumental leadership functions are integrated in an effective normative organization says Etzioni since involvement in the organization requires moral commitment.

Findings Relevant to the School. Using a technique consisting of interviews and sociometric questionnaires, Gold (19) concluded that those children in the classroom who are chosen by their peers as possessing power are above average in expressive personality characteristics. This suggests that the expressive leadership in the school classroom is held by a student, which fits in well with the next study.

After reviewing a number of research articles, Brim (12) concluded that the dominant role prescription for teachers in the classroom is to be task oriented. They gain respect but lose attraction by being task oriented. Both teacher and student wish more attention could be given to social-emotional matters but if this occurs task accomplishment suffers. The research suggests that the instrumental and expressive aspects of leadership roles may be incompatible, that is, the teacher

cannot fulfil them both.

Incompatibility of Instrumental and Expressive Roles

In groups organized for the purpose of presenting sociodramas portraying an ideology to a sociology class, Theodorson (36) noted that those groups that found their instrumental goals being frustrated by a lack of consensus increased the amount of expressive interaction in an attempt to achieve consensus at the social level. In other words, when group goals were threatened members took action which tended to increase group cohesiveness at the expense of goal-directed action.

Wispe (37) asked a group of insurance salesmen, comprising a district unit, questions concerning whom they would choose as a sales assistant, lecturer on a new sales plan, house guest for a social evening, and insurance information source. He also asked them to choose the salesmen who exhibited aggressiveness, sympathy, and insurance intelligence to the highest degree. The results were analyzed by sociometric techniques. Choice as a house guest correlated highly with ascribed sympathy whereas those chosen as a sales assistant were rated high on aggressiveness. The author concludes that the hard driving agent, who would be a valuable sales assistant, is not the person to invite home for a relaxing evening, while the person with compassionate qualities, who makes a pleasant house guest, is not the person to select if you have to make your sales quota. These insurance salesmen were faced with the dilemma of striving for selling success and for acceptance as human beings at the same time.

Norfleet (31) asked members of work groups who they thought was

the most productive group member and who in their group they would choose for leisure time companions. He found a high correlation between participation in discussion and being chosen most productive group member. There was much less of a relationship between being chosen as a leisure time companion and being chosen most productive group member. During the discussion members tended to address their remarks to the person they perceived as productive and to pay no attention to those they chose as leisure time companions. It should be noted that experimental conditions were such that the groups were highly task-oriented.

Homans (33) describes this phenomenon by saying that "the exercise of authority by one man over another tends to inhibit pure liking of the subordinate for the superior, although the subordinate may feel some respect for the superior's abilities."

On the basis of research he has conducted Fiedler (18) says:

The problem . . . suggests the presence of an implicit contradiction in two major types of demands we make of the leaders of small task groups. First and foremost, we obviously demand that our leaders be effective, that is, we want them to make their groups maximally productive. Second, we also want the leader to be responsible for the psychological well-being of his men. We want him to be a kindly father confessor to whom his men can bring their personal problems. We want him to listen sympathetically to his men, to give them help and advice, and to allay their anxieties and insecurities.

This paper will attempt to show that these may well be basically incompatible demands. (18, p. 337).

Fiedler goes on to mention that organizational structure seems to be designed to maintain a social and psychological distance between different ranks in the hierarchy. He maintains this is necessary so the superior can make objective decisions about his subordinates. An executive cannot think objectively about someone he is even slightly emotionally involved

with. Limitations on informal interaction between superiors and subordinates are greatest in organizations, such as the army, where the superior makes life and death decisions affecting his subordinates. The expressive relationship which Fiedler calls the quasi-therapeutic relationship requires personal, close, understanding, empathetic, accepting, non-threatening attitudes on the part of the leader towards the follower. These qualities are precluded by the necessity for social distance. In short, the leadership and quasi-therapeutic functions are incompatible.

Conclusion

The amount of relevant research done on the instrumental-expressive dichotomy in various fields leaves little doubt as to its usefulness. Its exact nature and extent are still in doubt as indicated by the apparently contradictory studies mentioned; however, these studies concentrated on operating organizations whereas the main body of research is on small laboratory groups.

In explaining these contradictions, one distinction which cannot be disregarded is the difference between incompatible personality requirements and incompatible role requirements. The instrumental and expressive role requirements may well vary in different situations so as to be compatible in some and not in others. In organizations, this could be related to the compliance structure as Etzioni (17) suggests.

Another difficulty encountered is the possible lack of equivalence among the various terms used to describe the dichotomy. For example, is "initiating structure in interaction" exactly the leader behavior required to fulfil an "instrumental role"? Is a "people-minded" staff member the

same as a "considerate" staff member? Do the "idea" men and the "best-liked" men fit into the "intellectual" and "social" roles respectively? A lack of exact equivalence makes it difficult to compare different pieces of research.

The findings of Kahn and Katz (27) and Leighton (29) are more difficult to explain; however, it helps to note that both studies were done in the field in actual operating organizations. They might best be explained in terms of some comparative theory of organizations such as Etzioni (17) has tried to produce. He provides for both separate and integrated expressive and instrumental structures in organizations.

Most of the research on the instrumental-expressive dichotomy has been done on small experimental groups brought together temporarily for research purposes. The extent to which findings from this type of research are applicable to organizations is not known. The need now is for research to show where and how applicable the laboratory findings of the small groups experts are to formal organizations such as school staffs. This study has attempted to examine the instrumental-expressive dichotomy and its correlates in the school staff in terms of Etzioni's theories.

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CHAPTER III

THEORY, DEFINITIONS OF TERMS, AND HYPOTHESES

This chapter begins with a resumé¹ of the theory underlying the study, most of which is drawn from Etzioni (1). This is followed by definitions of terms and the hypotheses for both schools and individuals.

Etzioni's Analysis of Organizations

Etzioni classifies complex organizations on the basis of the mode of compliance exhibited by the lower participants. He defines compliance as ". . . a relationship consisting of the power employed by superiors to control subordinates and the orientation of the subordinate to this power." (1, p. xv). The three types of power which he identifies are coercive, remunerative, and normative; the three types of involvement, or orientation to power, are alienative, calculative, and moral. Congruent organizations, which are the most stable and by far the most common type, combine the three types of power and involvement in the order given above to produce three organizational types: coercive, utilitarian, and normative respectively. The following illustration shows the types of organizations as a function of power and involvement.

Kinds of Power	Kinds of Involvement		
	Alienative	Calculative	Moral
Coercive	Coercive		
Remunerative	-	Utilitarian	-
Normative	-	-	Normative

(adapted from 1, p. 12)

One of the correlates of compliance which Etzioni examines is the elite structure. According to his theory, in coercive organizations such as prisons where the lower participants are alienated, the organizational structure is segregated or split along instrumental-expressive lines so that the social-emotional or expressive area is dominated by inmates while the instrumental or task area is dominated by the prison staff. In functional normative organizations, which rely on moral involvement, the instrumental and expressive structures must be amalgamated or integrated. Instrumental as well as expressive activities are controlled chiefly by the formally designated organizational leaders. In short, moral commitment to the organization is positively and necessarily correlated with an integrated instrumental-expressive structure just as alienation to the organization is related to an almost complete instrumental-expressive split. Utilitarian organizations, toward which the lower participants exhibit mild commitment or mild alienation, fall in between coercive and normative ones with respect to the instrumental-expressive structure.

The following quotation gives Etzioni's views on atypical normative organizations, a label he attaches to schools because they do not fit neatly into any of the categories.

In less typical normative organizations, the lower degree of members' integration into the organizational collectivity is paralleled by a higher degree of differentiation in the organizational polity. Organizational elites have less leadership power, and informal leaders play a more central role in the control of lower participants. Special efforts are made in these organizations to encourage formal expressive leaders, in order to reduce the dysfunctional effects of alienated informal leadership.
(1, p. 112)

There are two problems involved in determining, from Etzioni's

theory, what the compliance mode of teachers might be. The first is the very fact that the school does not fit well into any of the three congruent organizational types. Etzioni refers to the school as an atypical normative organization because there are coercive elements present although the primary mode of compliance is normative. Students come to school and obey the directives of the teachers because they wish to please their parents, get good marks, or earn more money later in life. These are all symbolic or indirect rewards. On the other hand, it is illegal for the child not to attend school and coercion may be used to ensure that he does attend. Furthermore, the teacher may use force or threaten to use force to get the child to obey her directives. The predominant type of involvement is moral and the major mode of compliance is normative but the possibility of coercion always lingers in the background.

The analysis of the first problem points the way to the second one; namely, that teachers, according to Etzioni's theory, are not the lower participants in schools. Therefore, the organizational type is not a reflection of their compliance mode. In his book, Etzioni makes it clear that when we examine the type of organization in terms of his classification, we are looking at the compliance modes exhibited by the lower participants. He emphasizes that the lower participants in schools are students. Therefore, when we examine the compliance mode of teachers we are really examining the behavior of the elite members of the organization and not the lower participants. Etzioni points out that, although the compliance modes of lower participants vary considerably according to the type of organizations, the compliance modes of elite participants in

all types of organizations tend to be similar. The co-existence of two types of compliance, namely normative and remunerative, is common with elite members in all types of organizations. The most logical conclusion from Etzioni's theory, then, is that the compliance mode of teachers is probably a combination of the normative and remunerative modes. That is, they exhibit a combination of moral and calculative involvement in an organization which exerts both normative and remunerative power on them.

From this conclusion it is possible to identify some of the theoretical correlates of the compliance mode of teachers. Moral involvement and normative compliance are associated with integrated instrumental and expressive structures. Conversely, utilitarian compliance and calculative involvement are associated with some dissimilarity of the instrumental and expressive structures. The characteristics of calculative involvement and dissimilar instrumental and expressive structures should be related to dissatisfaction since, according to Etzioni, calculative involvement is correlated with alienation whereas moral involvement is related to commitment. In the case of teachers it is not perfectly clear whether dissatisfaction would be with the school or with the teaching profession. Moral involvement and integrated instrumental and expressive structures should also be correlated with a high estimate of the effectiveness of the principal since commitment to the organization implies commitment to the hierarchy. Because of the difficulty of evaluating teaching, and because of the fact that teachers are paid on the basis of criteria not directly related to classroom teaching, the main reward for good teaching must be indirect or symbolic. Hence good teaching may be

associated with moral involvement and mediocre teaching with calculative involvement. Thus moral involvement and integrated instrumental and expressive structures should be associated with less school effectiveness. This analysis provides a basis for hypotheses concerning the school as a social system.

Definitions of Terms

In referring to the following definitions, two points should be kept in mind. Firstly, this study is limited to the staff members of schools and does not include students. Use of the term "size of the school" refers to the number of staff members rather than to the size of the student body. Secondly, the definitions of the various scores and indices are based on the assumption that the number of responses a person makes is independent of staff size.

compliance - ". . . a relationship consisting of the power employed by superiors to control subordinates and the orientation of the subordinates (involvement) to this power." (1, p. xv) The three types of power are coercive, remunerative, and normative and the three types of involvement are alienative, calculative, and moral. These combine respectively to produce the three types of compliance: coercive, utilitarian, and normative.

involvement - evaluative orientation of an individual toward an organization; the psychological investment of an individual in an organization. The three kinds of involvement are alienative involvement for alienation, moral involvement for high commitment, and

calculative involvement for the borderline zone between commitment and alienation. (1, p. 9)

instrumental structure - the pattern of interaction which characterizes activities within the group that are directed toward the achievement of the group's goals. The instrumental structure is not the same as the legal structure that is defined by the organization chart, since the instrumental structure in practice may bear little resemblance to the legal one. The term "formal structure" is sometimes used synonymously with legal structure and sometimes with instrumental structure.

expressive structure - the pattern of interaction which characterizes activities within the group that are directed toward satisfying the needs of the group itself, including the needs for norms, socialization, emotional outlets, and group continuation. The expressive structure is sometimes called the social-emotional structure or the informal structure. The term "informal structure" has a number of slightly different meanings and so is not always synonymous with expressive structure.

instrumental-expressive dichotomy - the incongruence between the instrumental structure and the expressive structure of some collectivity.

sociometric data - data derived from matrices constructed on the basis of information given in response to sociometric questions.

score - a numerical estimate of a group or individual characteristic that has not been adjusted to eliminate the effect of school staff size on its value.

index - a numerical estimate of a group characteristic that has been adjusted to eliminate the effect of school staff size on its value.

orientation - interpretation of the interpersonal school environment by the individual. This is represented numerically by the pattern of responses that he gives to a sociometric question.

position - a person's place in the interpersonal school environment as perceived by other staff members. Position is represented numerically by the pattern of responses that the individual receives on a sociometric question. This is contrasted with orientation. Each individual will have both an orientation and a position on each sociometric question that is capable of reciprocation. Since both communication and socialization are reciprocal acts, each individual will have instrumental and expressive orientations and instrumental and expressive positions. (see "orientation")

orientational-positional incongruence score - a measure of the incongruence between a person's orientation to and position in the school interpersonal structure. This could be either the instrumental or expressive structures; each will yield a different score. In other words, it is a measure of the number of unreciprocated responses and is meaningful only for those sociometric questions that can be reciprocated. This can be considered an inverse measure of a person's perception of his position in the social structure of the school. The higher the individual's score, the

greater is his misperception of how others regard him with respect to the relevant measure.

instrumental-expressive orientational incongruence score - a measure of the incongruence between an individual's orientation to the instrumental structure and his orientation to the expressive structure.

instrumental-expressive positional incongruence score - a measure of the incongruence between an individual's position in the instrumental structure and his position in the expressive structure.

school instrumental-expressive incongruence score - a measure of the incongruence between the instrumental responses and the expressive responses for a school. The school incongruence score is a measure of the instrumental-expressive incongruence for the entire staff.

school instrumental-expressive incongruence index - the school instrumental-expressive incongruence score divided by the number of staff members in the school. This is a measure of the incongruence which should be relatively free of effects of school size.

school asymmetry index - a measure of the extent to which school staff members misperceive their position. It is the sum of the orientational-positional incongruence scores for the school divided by the number of staff members. The instrumental and expressive matrices will yield separate asymmetry indices.

School Level Hypotheses

Before any hypotheses could be formulated it had to be assumed that a difference exists between the instrumental and expressive structures

within school staffs. With sociomatrix methods, randomness in responding will cause a difference between two matrices, thus, no statistical technique can be used to indicate the significance of this difference unless information is available concerning the reliability of the responses for each matrix. The success of the following hypotheses will demonstrate the usefulness of the various sociometric difference scores and indices used in this study.

1. The less the similarity between the instrumental and expressive structures in a school staff, the greater will be the level of calculative involvement as measured by the desire for a higher salary. An integrated instrumental-expressive structure is found in conjunction with pure moral involvement. The greater the alienative or calculative involvement, the less instrumental-expressive integration there will be. The assumption is made that the more dissatisfied a teacher is with his salary, the greater is his calculative involvement. To a person motivated largely by symbolic rewards (moral involvement or normative compliance), salary should be less important. Calculative involvement is measured by asking the respondent how much salary he feels he should be getting relative to what he is getting. The greater the positive difference between desired salary and actual salary, the greater is the level of calculative involvement.

2. The less the similarity between the instrumental and expressive structures in a school staff, the lower will be the perceived effectiveness of the school. Since the effectiveness and efficiency of teachers has defied objective measurement, it is necessary for the school systems

to rely heavily on a teacher's desire to do a good job. This requires aspiration for the symbolic and social rewards that accompany good teaching. Normative compliance would then likely be related to good teaching and school effectiveness. Since normative compliance is also correlated with an integrated instrumental-expressive structure, the hypothesis is that a large instrumental-expressive split will occur in schools with low perceived effectiveness ratings. In fitting this hypothesis into Etzioni's theory, perceived effectiveness of a school is assumed to be highly related to actual effectiveness.

3. The less the similarity between the instrumental and expressive structures, the lower will be the mean level of satisfaction with teaching for the school staff. This is a logical implication of Etzioni's theory. The higher the level of alienation, the greater the instrumental-expressive dichotomy.

4. The less the similarity between the instrumental and expressive structures, the lower will be the mean level of satisfaction with the school. This hypothesis along with the previous one is designed to determine whether the dichotomy is related to alienation with respect to the profession or the school.

5. The less the similarity between the instrumental and expressive structures, the less effective will the principal be judged to be by his staff. An effective leader in a normative organization should exhibit both consideration which is a characteristic of expressive leadership and initiating structure which is a characteristic of instrumental leadership. If the school principal exhibits both forms of leadership to a degree he is an effective principal and this will tend to bring

about an integrated structure. Here again, in fitting this hypothesis into Etzioni's theory, rated effectiveness is equated with actual effectiveness.

6. In an attempt to determine empirically some correlates of the instrumental-expressive dichotomy, the similarity between the instrumental and expressive structures was correlated with the following measures of the school staff: mean age, mean years of teaching experience, mean years of experience in the school, mean years of teacher education, and the variances of the above measures.

Individual Level Hypotheses

The hypotheses at the individual level are derived from those at the school level on the assumption that instrumental-expressive dissimilarity for the individual is analogous to the dissimilarity between the instrumental and expressive structures of the organization. The relative success of the school level hypotheses and the individual level hypotheses can be considered an indication of whether organizational or individual factors are more important in determining the values of measures of social interaction within schools. The individual level hypotheses are as follows:

1. The less the similarity between an individual's instrumental and expressive orientations and his instrumental and expressive positions, the greater will be his level of calculative involvement.
2. The less the similarity between an individual's instrumental and expressive positions, the lower will be his rating of school

effectiveness.

3. The less the similarity between an individual's instrumental and expressive orientations and his instrumental and expressive positions, the lower will be his satisfaction with teaching.
4. The less the similarity between an individual's instrumental and expressive positions, the lower will be his satisfaction with the school.
5. The less the similarity between an individual's instrumental and expressive orientations and his instrumental and expressive positions, the less effective he will consider the principal.
6. The dissimilarity between an individual's instrumental and expressive orientations and his instrumental and expressive positions were correlated with the following individual level variables: age, sex, marital status, years of teaching experience, years of experience in present school, and years of teacher education.

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CHAPTER IV

INSTRUMENTATION, DATA COLLECTION, AND METHODOLOGY

Instrumentation and Data Collection

The collection of data for this thesis was done as a part of a larger study. The questionnaire is the revised school organization questionnaire found in Appendix C. It is a revision of the provisional school organization questionnaire, found in Appendix B, which was administered to a pilot school and altered in the light of recommendations of researchers and staff members.

The questionnaire itself consists of three sections. The first section is a sociometric section which contains six questions, the first two of which were used to obtain the sociometric data for this thesis. These two questions were designed to reveal the instrumental and expressive structures by asking for the patterns of task-oriented communication and socialization respectively. The second section contains five multiple choice questions designed to ascertain individual attitudes toward teaching, the school, the principal, salary, and the working situation. The third section collects information on personal variables such as age, sex, years of teacher education, etc.

The questionnaire was administered to 389 teachers in eighteen schools. This sample was drawn from schools outside the city of Edmonton but within reasonable driving distance. Schools with fewer than twelve staff members were not solicited. Letters requesting participation were sent to those schools chosen for the sample. Copies of these letters are

included in Appendix A. Enclosed with the letter were a self-addressed envelope and a consent form. Arrangements for administering the questionnaire were finalized by mail with those schools which returned the consent forms with a positive reply. Of the twenty-six schools contacted, eight either did not respond or responded negatively. Eighteen schools or 69 per cent of those contacted participated. Thus, the sample of schools was not truly random but no systematic biasing factors that would affect the results were evident.

Those schools that agreed to participate were required to send in a staff list which included all the full-time and part-time teachers and administrators, all professional school personnel, the school secretary, and librarians. Each staff member was assigned a number. Staff lists including the numbers were duplicated and taken to the schools by the researchers.

The questionnaires were administered by one of three researchers during a staff meeting, special meeting, or lunch hour in all but one school. Questionnaires were delivered to this one school, located at an outlying point, and were administered by the principal, and returned by mail to the university. Each person in each of the schools was given a questionnaire and a staff list. Staff members filled out the questionnaire after the instructions had been outlined by the researcher. Individuals were designated in the questionnaire by the number which appeared next to their name in the staff list.

Description of the sample

Of the 389 staff members from the eighteen schools involved in

this study, 386 or 99.2 per cent completed questionnaires. Thus, the staff sample within the schools which participated was essentially complete. Ninety-two staff members held positions in addition to their teaching responsibilities or were employed full-time in extra-teaching positions. The other 297 were strictly classroom teachers. Table I shows the types of schools that participated according to grade levels. Table II shows the years of teacher education of the 148 males and 238 females who replied to the questionnaire. Additional descriptive information concerning the sample can be found in Appendix D.

Methodology of the Study

Sociometry was originated by Moreno, a psychiatrist turned sociologist. He describes this technique in his book Who Shall Survive? (15). Forsyth and Katz (8) first suggested the objective presentation of data from a sociometric questionnaire by means of a matrix. Rows represent respondents and columns persons chosen. They used "+" and "-" for matrix elements; "+" represented acceptance; and "-", rejection. No response was indicated by a blank. They identified subgroups by inspection of the matrix and rearrangement of rows to cluster persons who chose one another together.

Beum and Criswell (2) suggested the use of Hollerith punched cards used with card sorters and tabulating machines to help analyse sociometric data in matrix form. Each card contained information on a respondent and one of his choices, thus the number of cards was equal to the total number of choices made. Katz (11) advanced this technique by using one card for each respondent on each dimension and representing the matrix on the card

TABLE I
DISTRIBUTION OF SCHOOLS IN THE SAMPLE BY GRADE LEVELS

Grade levels in school	Number of schools
1 - 6	4
1 - 9	2
1 - 12	3
7 - 9	3
7 - 12	3
10 - 12	3

TABLE II
YEARS OF TEACHER EDUCATION OF TEACHERS IN THE SAMPLE

Number of years	Number of teachers
1	117
2	74
3	41
4	89
5	26
6	12
7	2
No reply	28

by having the column numbers represent the chosen individuals. In this way he reproduced the matrix on cards. His article outlines methods of analysis using these cards.

Luce and Perry (12) constructed sociomatrices with element values of zero and one and raised these matrices to various powers. If "A" chooses "B" this is represented in the matrix by an element value of one for Row A and Column B. "A" may choose "B" as a friend, enemy, adviser, confidant, etc. depending on the study. If "A" does not choose "B" then this element has a value of zero. After the matrix is constructed it is made symmetric by the elimination of unreciprocated choices. The squared matrix, that is, the matrix raised to the second power, represents second order or mediated relationships between two persons. The number of mutual friends, enemies, etc. each individual has is represented by the diagonal of the squared matrix. The cubed matrix represents the number of third order relationships and is useful for subgroup detection.

Festinger (7), a pioneer in sociomatrix techniques, outlined the use of matrices in the representation of sociometric data including the reasons for using second and third power matrices and the methods discovered so far for subgroup identification. A year later, Beum and Brundage (1) outlined a technique for subgroup detection involving the rearrangement of matrix rows and columns. Harary and Ross (10) reported a complex but systematic method for detecting subgroups using set theory.

Weiss and Jacobson (16) demonstrated the use of the sociometric technique in examining the structure of a large organization. They used the sociomatrix method and computer analysis to identify work groups and

communication links.

In 1959, Glanzer and Glaser (9) summarized the work done so far in the field of group structure. Two trends noted were from graphical to mathematical representation of sociometric data and from like-dislike questions to ones covering a wide range of interaction. Their article includes a forty-seven item bibliography.

MacRae (13) presented a method of identifying subgroups in the sociomatrix by the use of factor analysis. It is readily adaptable to computer processing. Coleman and MacRae (4) outlined computer techniques using the UNIVAC I to make the matrix symmetrical, to locate subgroups by the permutation of rows and columns, and to calculate certain indices for further analysis.

Cooper (5) suggested some uses of sociometric techniques for school administrators, however, Boyan (3) was the first to study a school staff in this way. His study is one of the most thorough and intensive examinations of a school staff ever undertaken. He attached himself to a school staff full-time for one year and collected data by observation, interview, and questionnaire. He used the sociomatrix technique for certain purposes but did not take his matrices to higher powers. Boyan noted the difference between the formal and informal organizations of the school staff and suggested functions served by the informal organization. Boyan's work was followed up by McCleary (14) who used a sociometric technique involving matrix analysis to determine the influence structure within a high school. He used the reciprocated matrix and raised it to the second and third powers. His questionnaire allowed for degrees of

interaction and recorded frequency and location as well. McCleary suggested the use of stochastic matrices in analysing complex organizations.

In this study the responses to each of the instrumental and expressive questions from each school were constructed into a square matrix with the rows representing the respondents; and the columns, the choices of the respondents. A matrix element value of one meant that the person represented by that element's row has indicated that he interacts with the person represented by that element's column in the way specified by the question. A matrix element value of zero indicated no interaction. Diagonal elements $((1,1), (2,2), \dots, (n,n))$ of the matrix were arbitrarily set to zero since this study did not concern itself with processes internal to individuals. Zero and one are the only possible element values in the first power matrix and the higher power matrices were not considered.

The effect of school staff size on the number of responses in a matrix was a necessary consideration in defining sociometric measures. It was assumed, initially, that the number of responses made by an individual would be relatively independent of school staff size; thus, the total number of responses in the matrix would be proportional to the number of persons responding, that is, to the school staff size. Had the number of responses made by an individual been proportional to school staff size then the total number of responses in the matrix would have been proportional to the square of school staff size. This assumption was tested before proceeding with the analysis.

School Level Sociometric Variables

The difference or lack of congruence between the instrumental structure and the expressive structure of a school is termed instrumental-expressive incongruence. It is a measure of the extent to which the interaction pairs involved in instrumental interaction are different from the interaction pairs involved in expressive interaction. Since the presence of an interaction pair may be reported by one or both of the members, there will no doubt be some lack of consensus as to the nature of the two structures. Instrumental asymmetry is a lack of consensus concerning the instrumental structure and expressive asymmetry is a lack of consensus concerning the expressive structure. The extent to which asymmetry is present in the school is indicated by the number of interaction pairs reported by one member of the pair only.

The school instrumental-expressive incongruence score is operationally defined as the sum of the absolute values of the difference between corresponding elements of the instrumental and expressive matrices. The calculation of this score by hand for the hypothetical school whose matrices are on Pages 53 and 54 can be done by going through the two matrices element by element and counting a one every time the corresponding elements differ. Thus elements (a,e) in the two matrices would count zero as would elements (c,b) because the pairs are (0,0) and (1,1) respectively. Elements (b,e) would count one because the element values in the two matrices are zero and one respectively. The sum of these ones is the school instrumental-expressive incongruence score. In accordance with the assumption concerning the relationship of staff size to the

number of matrix elements the school instrumental-expressive incongruence index is defined as the score divided by the school staff size.

In defining asymmetry scores, the concept of symmetrically opposite elements is important. Geometrically, they are the symmetrically opposite elements in the same matrix using the principal diagonal (drawn from upper left to lower right) as the axis of bilateral symmetry. Mathematically it is the element with the reverse column and row numbers. Thus the symmetrically opposite element of element (3,5) would be (5,3) and the symmetrically opposite element of (e,c) would be (c,e) in the hypothetical school. It can be seen that symmetrically opposite elements represent individuals responding to each other. If both elements are the same then the individuals agree as to whether they interact or do not interact. If one of the pair is zero and the other one, then the individuals do not agree as to whether they interact.

The school instrumental asymmetry score is defined as twice the number of symmetrically opposite pairs with dissimilar element values in the instrumental matrix. The word "twice" is included for ease of calculation as will be seen later and does not affect the properties of the score.

The school expressive asymmetry score is derived as above, substituting expressive for instrumental in the definition. The asymmetry scores for the hypothetical school can be calculated according to the definitions given.

The asymmetry indices are defined as the corresponding scores divided by school staff size.

Individual Level Sociometric Variables

Although individuals cannot possess instrumental and expressive structures in the same sense that organizations do, analogies can be drawn between the two since it is individuals who make up organizations. An individual cannot have an instrumental-expressive dichotomy but this dichotomy is caused by persons within the organization having different bases for different types of interaction. The behavior difference of concern here is along the instrumental-expressive axis. Thus if instrumental interaction is carried on between different pairs of persons than those which carry on expressive interaction, the members of these pairs show an instrumental-expressive difference or incongruence. The sum of this incongruence for all individuals in the school is the school instrumental-expressive incongruence score. At the individual level, however, there are two points of view since there are two persons in each pair. Firstly, there is the individual's own idea of the incongruence between his instrumental and expressive interaction and secondly, there are the views of all the others who interact with this individual. Any measure of the former point of view may be called instrumental-expressive orientational incongruence since it is an indication of the difference between a person's orientations to the instrumental and expressive interaction structures. Instrumental-expressive positional incongruence designates a measure of the latter point of view since this is an indication of the difference between a person's positions in the instrumental and expressive structures as seen by those who interact with him. The question immediately arises as to why the orientations and positions should not be the same if instru-

mental and expressive interaction is a mutual process as has been assumed. The answer is that two people may not be in agreement as to whether they interact on a given dimension. For example, Person A may report that he interacts expressively with Person B but Person B may report no expressive interaction with Person A. Obviously either Person A or Person B misperceives the nature and/or extent of his interaction with the other individual. If an individual's idea of who the others are with whom he interacts and of how he interacts with them are in complete agreement with the ideas of these others then his orientations and positions will be the same on all dimensions. That is to say, if each reported interaction pair is matched by the same interaction pair reported by the other member then each person's orientation and position will be the same. If an individual's instrumental orientation is the same as his instrumental position and his expressive orientation is the same as his expressive position then his instrumental-expressive orientational incongruence must be the same as his instrumental-expressive positional incongruence.

A measure of a person's misperception of his instrumental position, that is, the difference between his orientation and his position in the instrumental structure is called the instrumental orientational-positional incongruence score. The analogous measure for the expressive structure is called the expressive orientational-positional incongruence score. From the preceding discussion it can be seen that if these two measures are zero for an individual then his instrumental-expressive orientational incongruence will be the same as his instrumental-expressive positional incongruence. The greater the difference between his orientation and position on each of the two dimensions (instrumental and expressive), the

greater will be the difference between his orientational incongruence and his positional incongruence.

In terms of the sociomatrix, an individual's orientation is represented by his own responses, that is, by his row. His column contains the responses others have made to him and so represents his position. Thus, his orientational-positional incongruence score can be defined as the number of elements (a,x) in his row (a) which differ from the symmetrically opposite elements (x,a) in his column (a) . This definition can be used to find the instrumental and expressive orientational-positional incongruence scores in the hypothetical school.

It should be noted that each element is both a member of a row and a column, so in calculating the orientational-positional incongruence scores for the complete staff each element will be considered twice, once as a row member and once as a column member. The sum of all the orientational-positional incongruence scores for a school on either the instrumental or expressive dimension is therefore equal to twice the number of symmetrically opposite pairs in the corresponding matrix with dissimilar element values. This has been previously defined as the asymmetry score for the school.

The sum of the absolute values of the differences between corresponding elements in Row A of the instrumental and expressive matrices is Person A's instrumental-expressive orientational incongruence score. For the hypothetical school this can be calculated by hand by going through the two 'A' rows element by element and counting a one whenever the corresponding element values in the two matrices are not the same. The sum of these ones is Person A's instrumental-expressive orientational

incongruence score.

The same definition and procedure applied to columns instead of rows yields a person's instrumental-expressive positional incongruence score. It is a measure of the difference between his position in the instrumental structure and his position in the expressive structure as seen by other staff members. The definition is the sum of the absolute value of the differences between corresponding elements in Column A in the instrumental and expressive matrices.

It can be seen that the sum of the instrumental-expressive orientational incongruence scores for a school will be equal to the total number of corresponding elements in the two matrices that are different (incongruent) and that this is the definition of the school instrumental-expressive incongruence score. By the same reasoning it can be shown that the sum of the positional incongruence scores for a school will be equal to the school instrumental-expressive incongruence score and hence to the sum of the orientational incongruence scores. This can be seen quite clearly in the hypothetical school.

Indices were not defined for individuals because of the assumption that the number of persons Individual A interacts with will be independent of school size. The relationship among individual level scores, school level scores, and indices is summarized in Table X on Page 69.

Sociometric Data for a Hypothetical School

The hypothetical school is presented for the purposes of clarifying and illustrating the preceding explanation of technique and the following

definitions. It has eight staff members who are lettered 'A' to 'H' inclusive. The tables on the following three pages show the instrumental matrix, the expressive matrix, and the individual level sociometric scores. An actual matrix from one of the schools can be found in Appendix F. The values of the school level matrix-derived measures are:

Instrumental-expressive incongruence score = 23

Instrumental-expressive incongruence index = 2.88

Instrumental asymmetry score = 24

Instrumental asymmetry index = 3.00

Expressive asymmetry score = 30

Expressive asymmetry index = 3.75

Tests of the Data

Certain tests can be performed to determine the pattern of responses. These will give information on the structural characteristics of the constructed matrices, on the sources of response variability, and on the suitability of the defined scores and indices.

The first set of tests was designed to indicate how the number of nonzero elements in the matrices is related to the size of the matrix, that is, to the number of staff members. For example, is the number of staff members that respondents communicate with proportional to the total number of staff members? If this is the case, the number of nonzero elements in communication matrices would be proportional to the square of the matrix size, since both the number of respondents and the number of responses per respondent contribute nonzero elements. On the other hand, if the number of staff members a respondent communicates with is indepen-

TABLE III
THE INSTRUMENTAL MATRIX FOR THE HYPOTHETICAL SCHOOL

	A	B	C	D	E	F	G	H
A	0	0	1	1	0	1	0	1
B	0	0	0	0	0	0	0	0
C	1	1	0	0	0	0	0	1
D	1	1	1	0	0	0	0	0
E	0	1	1	1	0	0	0	0
F	1	1	1	0	0	0	1	1
G	0	1	0	0	0	1	0	1
H	1	1	1	1	0	1	0	0

TABLE IV
THE EXPRESSIVE MATRIX FOR THE HYPOTHETICAL SCHOOL

	A	B	C	D	E	F	G	H
A	0	1	1	1	0	0	0	0
B	1	0	0	1	1	0	0	1
C	1	1	0	0	0	0	0	1
D	1	0	1	0	1	0	1	0
E	0	0	1	0	0	0	0	0
F	0	0	1	1	0	0	1	0
G	0	0	1	0	0	1	0	0
H	0	0	0	1	0	1	1	0

TABLE V
INDIVIDUAL LEVEL SCORES FOR THE HYPOTHETICAL SCHOOL

Individual	Name of Score from Key*			
	(1)	(2)	(3)	(4)
A	0	0	3	3
B	6	4	4	6
C	4	6	0	2
D	4	6	3	3
E	3	3	2	2
F	2	3	4	1
G	2	3	3	2
H	3	5	4	4

*KEY FOR TABLE

- (1) Instrumental orientational-positional incongruence score
- (2) Expressive orientational-positional incongruence score
- (3) Instrumental-expressive orientational incongruence score
- (4) Instrumental-expressive positional incongruence score

dent of the staff size, the number of nonzero elements in the matrix will be directly proportional to the size of the matrix (the number of rows or columns). This latter possibility is the assumption used in defining scores and indices. There appears to be no theoretical basis for supposing the number of nonzero matrix elements to be proportional to any nonintegral power of matrix size although the lack of complete statistical reliability of the responses would result in this alternative. A non-integral result was considered equivalent to the nearest integer.

The number of nonzero elements in the matrices for this study divided by three integral powers of matrix size ($0, 1, 2$) were correlated with the size of the matrix to see which of the three would show the least relationship to it. A least relationship corresponding to a power of one would confirm the assumption employed in defining the indices.

A second set of tests was used to determine whether most of the variance on a given nonsociometric measure lies within the schools or between the schools. It was hypothesized that, for most variables, the greater portion of the variance would be within the schools. This was checked by calculating the mean of the variances within each school on each measure and the variance of the means for the schools on each measure. An 'F' test was used to compare them.

A third test involved correlating the school level sociometric variables and the individual level sociometric variables. A high correlation between any two variables would suggest a redundancy of variables and some sort of empirical dependence between them.

The final test involved correlations among nonsociometric

variables to determine how relationships between sociometric and non-sociometric variables might be affected by nonsociometric relationships.

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CHAPTER V

RESULTS OF THE STUDY

The results of this study fall into two categories: tests of the data and empirical results. The tests of the data were designed to give an indication of the suitability and validity of scores and indices and to locate the main source of variance in the nonsociometric data. The section on empirical results makes use of the scores, indices, and nonsociometric data to test the hypotheses.

Tests of the Data

An attempt was made to determine the extent to which the scores and indices were related to factors presumed to be unrelated to what the scores and indices were designed to measure. For example, all the characteristics measured by the scores and indices were presumed to be unrelated to the school staff size, and yet size correlated significantly with a number of the scores and indices. The correlation coefficients between the scores and indices were also calculated to determine their interdependence.

The nonsociometric data used in this study was tested to determine whether most of the variance occurred among teachers within the schools or among the means for all schools.

Tests of Scores and Indices

Row sums and column sums of each matrix were correlated with the number of rows or columns and the number of elements of the matrix to

determine the extent to which the number of responses given or received by individuals was related to the size of the school staff and the square of the size of the school staff. The number of matrix elements is equal to the staff size squared. The proportions shown in Table VI are simply the squares of the Pearson product moment correlation coefficients between the variables. Table VI shows that the greatest portion of variance accounted for by either of the two structural characteristics considered is 3 per cent in the case of responses received in the expressive matrix, indicating that the number of responses given and received by individuals are relatively independent of school size. Apparently, the number of persons a respondent interacts with in the school is not a function of the number there are to interact with. This finding confirms the assumption made in defining individual level scores. At this point, one should recall that the smallest school in the sample had fourteen staff members. The conclusion may not apply to very small schools.

Although the column and row sums are not closely related to matrix size, it is a quite different question to ask whether the sums of the row sums or column sums for each matrix will correlate with school size. This can be reworded to ask if the total number of responses given or received in each school on each sociometric question will be related to the size of the school. A Pearson product moment correlation shows that 65 per cent of the variance of the total number of responses in the instrumental and expressive matrices for all schools can be accounted for by the size of the staff. Thus, the school level results are quite different from the individual level results. This is to be expected since the larger a school is the more respondents there are and the more responses there should

TABLE VI

PROPORTIONS OF THE VARIANCES OF RESPONSES GIVEN AND RECEIVED
ACCOUNTED FOR BY THE SIZE OF THE SCHOOL STAFF AND BY
THE SQUARE OF THE SIZE OF THE SCHOOL STAFF

Type of matrix	School staff size		School staff size squared	
	Responses given	Responses received	Responses given	Responses received
Instrumental	.006	.008	.006	.008
Expressive	.011	.030	.010	.027

be. This supports the assumptions used in defining the sociometric measures.

The three school level indices defined for this study were the school instrumental-expressive incongruence index, the school instrumental asymmetry index, and the school expressive asymmetry index. The first of these is simply the number of elements in the instrumental or expressive matrix that are different from the corresponding elements in the other matrix divided by the size of the school staff. It is a measure of the instrumental-expressive dichotomy which was hypothesized to be relatively independent of school staff size. The school instrumental asymmetry index is the number of asymmetrical or unreciprocated responses in the instrumental matrix divided by the size of the school staff. It is a measure of the extent to which individuals in the school misperceive their position in the instrumental structure. The school expressive asymmetry index is the analogous measure for the expressive matrix.

As pointed out in the section on definitions, the three school level sociometric indices were designed to be relatively independent of school staff size. The indices were obtained by dividing the respective school level scores by the number of staff members, on the assumption that the scores would be roughly proportional to the size of the school staff. Table VII shows the results of correlating the scores divided by a power of the staff size with the staff size to determine which measure is the least dependent on staff size. Clearly it is the chosen definition of the indices which fits this criterion. This definition is the score divided by the school staff size to the first power (score/size of staff). Nevertheless, the correlation between staff size and the instrumental asymmetry index, as originally defined, is significant.

TABLE VII

CORRELATIONS BETWEEN SCHOOL STAFF SIZE AND SCHOOL LEVEL
SCORES DIVIDED BY VARIOUS POWERS OF SCHOOL STAFF SIZE

Number of score from key*	Power of school staff size		
	0	1	2
1.	+0.694	+0.175	-0.548
2.	+0.915	+0.584	-0.767
3.	+0.732	+0.274	-0.605

*KEY

1. school instrumental-expressive incongruence score
2. school instrumental asymmetry score
3. school expressive asymmetry score

The dependence of the individual level scores on school staff size was also assessed. Scores were used at the individual level instead of indices because it was felt that the scores themselves would be relatively free of contamination by school size. This is in contrast to the school level scores which were divided by school staff size to compensate for the effect of this factor on the scores. This assumption was tested at the individual level by correlating school staff size with the four individual level scores, the scores divided by the square root of the school staff size, and the scores divided by school staff size. The results are given in Table VIII. It is apparent that the initial assumptions were correct. The correlations between the individual level scores and school staff size are small and positive. The other two sets of correlations are negative and larger in absolute value in all cases except one.

An important preliminary consideration in using these indices and scores is the extent to which they are correlated with each other. Table IX, page 67 shows that they are highly correlated with each other. These correlation coefficients are all significant at at least the .05 level, however the differences between the coefficients taken in sets of two are not significant in any case.

The four individual level scores that were defined are the instrumental-expressive orientational incongruence score, the instrumental-expressive positional incongruence score, the instrumental orientational-positional incongruence score, the the expressive orientational-positional incongruence score. These were related to the school level scores in the following ways. The school instrumental-expressive incongruence score was found by adding either the orientational incongruence scores or the

TABLE VIII
CORRELATIONS BETWEEN SCHOOL STAFF SIZE AND INDIVIDUAL LEVEL
SCORES DIVIDED BY VARIOUS POWERS OF SCHOOL STAFF SIZE

Number of score from key*	Power of school staff size		
	0	$\frac{1}{2}$	1
1.	+0.073	-0.105	-0.276
2.	+0.098	-0.142	-0.367
3.	+0.169	-0.059	-0.285
4.	+0.112	-0.131	-0.368

*KEY

1. instrumental-expressive orientational incongruence score
2. instrumental-expressive positional incongruence score
3. instrumental orientational-positional incongruence score
4. expressive orientational-positional incongruence score

TABLE IX
CORRELATIONS BETWEEN SCHOOL LEVEL INDICES*
(N = 18)

Number and name of school level index	Number of index	
	2.	3.
1. Instrumental-expressive incongruence index	.50	.86
2. Instrumental asymmetry index		.70
3. Expressive asymmetry index		

*All correlation coefficients are significant at the .05 level

positional incongruence scores for all the staff members in the school. These two sums were the same and will represent the instrumental-expressive incongruence in the staff. The school level index is obtained by dividing the score by the number of staff members. The sum of the individual orientational-positional incongruence scores for all staff members on either the instrumental or expressive dimension is the respective school asymmetry score. The score is adjusted for school size by dividing it by the number of school staff members. This yields the index. These relationships are shown in Table X.

Table XI, on page 70 shows the intracorrelations among these four indices. With a sample size of 389, all the coefficients are significant. The table shows that the expressive orientational-positional incongruence score has the greatest relationship to the other scores, particularly to the instrumental-expressive scores. This corresponds to the correlations at the school level where the school instrumental-expressive incongruence index was highly correlated with the school expressive asymmetry index. The correlations involving instrumental asymmetry at the school level and instrumental orientational-positional incongruence at the individual level were lower. These differences are not significant although the correlation coefficients themselves are. Nevertheless, the implication is that expressive incongruence is more closely related to the instrumental-expressive dichotomy than is instrumental incongruence.

Sources of Variance in the Nonsociometric Data. The variance within each school on each nonsociometric measure was calculated as was the variance of the means on that measure for each school. The variance of

TABLE X

RELATIONSHIP OF SCHOOL LEVEL INDICES TO INDIVIDUAL LEVEL SCORES*

\sum (instrumental-expressive orientational incongruence scores)	= school instrumental-expressive incongruence score
\sum (instrumental-expressive positional incongruence scores)	= school instrumental-expressive incongruence score
\sum (instrumental orientational-positional incongruence scores)	= school instrumental asymmetry score
\sum (expressive orientational-positional incongruence scores)	= school expressive asymmetry score
Instrumental-expressive incongruence index	= $\frac{\text{instrumental-expressive incongruence score}}{\text{number of school staff members}}$
School instrumental asymmetry index	= $\frac{\text{school instrumental asymmetry score}}{\text{number of school staff members}}$
School expressive asymmetry index	= $\frac{\text{school expressive asymmetry score}}{\text{number of school staff members}}$

*All summations are over the school staff members for the given school.

TABLE XI
INTRACORRELATIONS OF INDIVIDUAL LEVEL SOCIOMETRIC SCORES^a
(N = 389)

Number of score from key ^b	1.	2.	3.	4.
1.		.236	.229	.498
2.	.236		.344	.478
3.	.229	.344		.328
4.	.498	.478	.328	

^aAll correlation Coefficients are significant at the .01 level.

^bKEY

1. instrumental-expressive orientational incongruence score
2. instrumental-expressive positional incongruence score
3. instrumental orientational-positional incongruence score
4. expressive orientational-positional incongruence score

the means for all schools was compared with the mean variance of the schools on each nonsociometric measure. An 'F' test was used to determine if there was significantly more variance within the schools than among the schools. Since it was hypothesized that there would be more variance within the schools a one-tailed test was used. Table XII shows that for all of the nine nonsociometric variables considered, there is significantly more variance within the schools than there is among the schools. For this analysis sex and marital status were omitted since these are nominal variables. These results indicate, for example, that an individual's satisfaction with the working conditions in his school is much more dependent on the person himself and on factors that affect him individually than on the school. Perhaps even more surprising is the fact that the estimated or perceived effectiveness of the principal is, to a large extent, not a function of the principal himself, but of the individual teachers who rate him.

The lowest 'F' ratios occurred for the variables perceived effectiveness of the principal, years of teacher education for salary purposes, and satisfaction with teaching or working in the school. The first two and the last one are measures that would be expected to show little variation within a school, since these should depend on the school and the principal rather than on the individual teachers. Although these do register the lowest proportion of within-schools variance, there is nevertheless, significantly more within-schools variance than among-schools variance on these measures. Years of teacher education probably show a low 'F' ratio because of the different requirements of different types of

KEY FOR TABLE XII

Number of measure	Question number from questionnaire	Description of measure
1	7	estimated effectiveness of present school
2	8	satisfaction with working in present school
3	9	satisfaction with choice of profession
4	10	amount of salary increase desired
5	11	estimated effectiveness of principal
6	14	age of respondent
7	17(a)	total years or teaching experience
8	17(b)	years of experience in this school
9	18	years of teacher education for salary purposes

TABLE XII
SOURCES OF VARIANCE IN NONSOCIOMETRIC MEASURES

Number of variable	Grand mean	Grand Variance	Mean of variances	Variance of means	'F' ratio	Degrees of freedom	Level of significance
1	2.57	.649	.611	.182	3.35	17,17	.02
2	2.55	1.21	1.15	.173	6.61	17,17	.005
3	1.80	1.08	1.30	.102	12.7	17,17	.005
4	3.18	.870	.996	.0689	14.5	17,17	.005
5	2.47	1.22	1.30	.313	4.16	17,17	.005
6	39.2	169.	216.	20.5	10.5	17,17	.005
7	12.9	92.0	102.	11.0	9.29	17,17	.005
8	4.66	21.6	22.2	3.23	6.89	17,17	.005
9	2.66	2.31	2.77	.478	5.80	17,17	.005

schools (senior high, elementary, etc.) with respect to teacher education.

Empirical Results

School Level Results. Tables XIII to XVI inclusive give Pearson product moment correlation coefficients among school level variables. With a sample size of eighteen schools, coefficients above .468 are significant at the .05 level and those above .590 are significant at the .01 level.

Table XIII gives the correlations between sets of nonsociometric school level means. Six coefficients are significant at the .05 level.

Table XIV, page 78, shows the Pearson product moment correlation coefficients among the variances of the school level nonsociometric variables. Perhaps the most important observation here is that all the significant correlation coefficients are positive, in fact, all the correlations, significant or otherwise, save one, are positive. Thus, a reduction in variance for a school on any one measure appears to be associated with less variance on the other measures.

Table XV, Page 80, shows the correlations between the three school level sociometric indices and the nonsociometric school level means. Included in this table are the results of the tests of the school level hypotheses. Only one of the coefficients in this table is significant and it reaches significance at the .05 level. This is an inverse relationship between mean years of teaching experience for the staff and instrumental asymmetry, variables 7 and 13 in the table. No significant results were obtained for any of the school level hypotheses.

Table XVI, page 82, shows the correlations between the three school

KEY FOR TABLE XIII

Number of variable	Number of question	Sign	Description of variable
1.	7.	+	lower rated effectiveness of the school in educating its students
2.	8.	+	less satisfaction with teaching or working in the school
3.	9.	+	greater likelihood of choosing a profession other than teaching if choice could be made again
		-	greater likelihood of choosing teaching again
4.	10.	+	greater desired increase in salary
5.	11.	+	lower rated effectiveness of the principal
6.	14.	+	higher age
7.	17.	+	greater number of years of teaching experience
8.	17.	+	greater number of years of experience in present school
9.	18.	+	greater number of years of teacher education for salary purposes

TABLE XIII

CORRELATIONS AMONG NONSOCOMETRIC SCHOOL LEVEL MEANS

(N = 18)

Number	Number of variable from key								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1.	+1.000	+0.787*	+0.070	+0.177	+0.792*	-0.173	-0.025	+0.185	+0.114
2.		+1.000	+0.177	+0.183	+0.735*	-0.389	-0.196	+0.165	+0.192
3.			+1.000	+0.110	+0.170	-0.495*	-0.374	-0.158	+0.408
4.				+1.000	+0.067	-0.271	-0.040	-0.332	+0.551*
5.					+1.000	-0.195	-0.024	+0.221	-0.143
6.						+1.000	+0.728*	+0.255	-0.448
7.							+1.000	+0.345	-0.260
8.								+1.000	-0.243
9.									+1.000

*Significant at the .05 level

KEY FOR TABLE XIV

Number of variable	Number of question	Sign	Description of variable
1.	7.	+	lower rated effectiveness of the school in educating its students
2.	8.	+	less satisfaction with teaching or working in the school
3.	9.	+	greater likelihood of choosing a profession other than teaching if choice could be made again
		-	greater likelihood of choosing teaching again
4.	10.	+	greater desired increase in salary
5.	11.	+	lower rated effectiveness of the principal
6.	14.	+	higher age
7.	17.	+	greater number of years of teaching experience
8.	17.	+	greater number of years of experience in present school
9.	18.	+	greater number of years of teacher education for salary purposes

TABLE XIV

CORRELATIONS AMONG NONSOCIOMETRIC SCHOOL LEVEL VARIANCES
(N = 18)

Number	Number of variable from key					
	(1)	(2)	(3)	(4)	(5)	(6)
1.	+1.000	+0.779*	+0.340	+0.696*	+0.479*	+0.590*
2.		+1.000	+0.399	+0.656*	+0.539*	+0.233
3.			+1.000	+0.654*	+0.398	+0.076
4.				+1.000	+0.369	+0.382
5.					+1.000	+0.159
6.						+1.000
7.						+1.000
8.						+1.000
9.						+1.000

*significant at the .05 level

KEY FOR TABLE XV

Number of variable	Number of question		Description of variable
1.	7.	+	lower rated effectiveness of the school in educating its students
2.	8.	+	less satisfaction with teaching or working in the school
3.	9.	+	greater likelihood of choosing a profession other than teaching if choice could be made again
		-	greater likelihood of choosing teaching again
4.	10.	+	greater desired increase in salary
5.	11.	+	lower rated effectiveness of the principal
6.	14.	+	higher age
7.	17.	+	greater number of years of teaching experience
8.	17.	+	greater number of years of experience in present school
9.	18.	+	greater number of years of teacher education for salary purposes
12.	1. & 2.	+	school instrumental-expressive incongruence index
13.	1.	+	school instrumental asymmetry index
14.	2.	+	school expressive asymmetry index

TABLE XV
CORRELATIONS BETWEEN SOCIOMETRIC SCHOOL LEVEL INDICES
AND NONSOCIOMETRIC SCHOOL LEVEL MEANS

(N = 18)

Number of variable	Number of variable		
	(12)	(13)	(14)
1.	-0.209	+0.100	-0.238
2.	-0.210	-0.059	-0.312
3.	+0.077	+0.141	-0.045
4.	+0.120	-0.072	+0.047
5.	-0.237	+0.165	-0.260
6.	-0.180	-0.307	-0.224
7.	-0.143	-0.470*	-0.168
8.	-0.110	-0.150	-0.192
9.	+0.008	-0.052	+0.003

*Significant at the .05 level

KEY FOR TABLE XVI

Number of variable	Number of question		Description of variable
1.	7.	+	lower rated effectiveness of the school in educating its students
2.	8.	+	less satisfaction with teaching or working in the school
3.	9.	+	greater likelihood of choosing a profession other than teaching if choice could be made again
		-	greater likelihood of choosing teaching again
4.	10.	+	greater desired increase in salary
5.	11.	+	lower rated effectiveness of the principal
6.	14.	+	higher age
7.	17.	+	greater number of years of teaching experience
8.	17.	+	greater number of years of experience in present school
9.	18.	+	greater number of years of teacher education for salary purposes
12.	1. & 2.	+	school instrumental-expressive incongruence index
13.	1.	+	school instrumental asymmetry index
14.	2.	+	school expressive asymmetry index

TABLE XVI
 CORRELATIONS BETWEEN SOCIOMETRIC SCHOOL LEVEL INDICES
 AND NONSOCIOMETRIC SCHOOL LEVEL VARIANCES*

(N = 18)

Number of variable	Number of variable		
	(12)	(13)	(14)
1.	-0.050	+0.061	-0.088
2.	-0.330	-0.149	-0.375
3.	+0.001	+0.168	-0.037
4.	-0.258	-0.021	-0.208
5.	-0.154	+0.049	-0.284
6.	-0.187	-0.137	-0.184
7.	-0.233	-0.171	-0.273
8.	-0.186	-0.043	-0.222
9.	-0.186	+0.059	-0.077

*None of these correlation coefficients are significant

level sociometric indices and the school level nonsociometric variances. None of these coefficients are significant.

The one significant correlation coefficient in Table XV indicates that the greater the mean years of teaching experience of teachers on the school staff, the lower is the school instrumental asymmetry index, that is, the greater the experience of teachers on the staff, the better is their perception of the instrumental or task-oriented structure. From a theoretical point of view one would expect that experience would improve a teacher's ability to perceive the social structures of the school, however, this would not be limited simply to the instrumental structure but would apply as well to the expressive structure. The one significant empirical result obtained is, therefore, theoretically reasonable but no relationship was revealed between expressive asymmetry and years of teaching experience.

Another expected relationship would be between school instrumental asymmetry and mean number of years of experience in the present school. This latter variable would seem more likely to be related to school instrumental asymmetry than years of experience obtained in both the present school and other schools. However, Table XV shows no significant relationship between instrumental asymmetry and years of experience in the present school.

Likewise, no relationship exists between the means of years of teacher education of the staffs and the school asymmetry indices.

Because of the high correlation between age and years of experience at both the individual and school level, one would also expect a relation-

ship between age and instrumental asymmetry. The correlation between mean age of school staff members and the instrumental asymmetry index is -0.307 which is in the expected direction but is not quite significant.

The main reason for this lack of significant empirical results at the school level would seem to be the small sample size, eighteen. The individual level analogy to school instrumental asymmetry, instrumental orientational-positional incongruence, yielded more significant results because of the larger individual level sample. At the individual level, instrumental orientational-positional incongruence correlates positively with the desire for more salary or remunerative compliance. Remunerative compliance correlates negatively with age; age correlated positively with years of experience; and, as we have seen at the school level, mean years of teaching experience correlates negatively with instrumental asymmetry. This circular cluster of relationships includes an accurate perception of the instrumental structure of the school staff, lower remunerative compliance, higher age, and more years of teaching experience; or conversely, an inaccurate perception of the instrumental structure, higher remunerative compliance, lower age, and fewer years of experience. There is no significant individual level correlation between remunerative compliance and years of teaching experience. Two assumptions necessary in forming this cluster were that school instrumental asymmetry is equivalent to individual instrumental orientational-positional incongruence and that mean years of teaching experience for the school staff is equivalent to the years of teaching experience for an individual teacher. These assumptions and the failure to obtain significant correlations across the circular cluster cast considerable doubt on its usefulness.

The individual level relationship analogous to the one significant school level relationship would be between the instrumental orientational-positional incongruence score and the years of teaching experience. The sign of the correlation coefficient for this relationship indicates that the greater the instrumental orientational-positional incongruence score, the greater is the experience of the teacher. If this correlation coefficient were significant it would contradict the analogous relationship at the school level.

Individual Level Results. Tables XVII to XXI inclusive give the correlation coefficients among individual level variables. With a sample size of 389 individuals, lower coefficients are significant at the individual level than at the school level. For the two-tailed test, coefficients above .11 are significant at the .05 level and those above .14 are significant at the .01 level. Those above .09 are significant at the .05 level for the one-tailed test.

Tables XVII and XVIII show the correlations among nonsociometric individual level variables. Table XVII gives the Pearson product moment correlations among all those variables assumed to be continuous and normally distributed, and Table XVIII, Page 89, shows the point biserial correlations among two variables treated as dichotomous and nine continuous normally distributed variables. The two dichotomous variables are sex and marital status. For the correlation coefficients involving sex, females were assigned a value of zero and males a value of one. Persons who were single, widowed, or divorced were designated as not presently married and assigned a value of zero on marital status. Persons presently married were assigned a value of one.

KEY FOR TABLE XVII

Number of variable	Number of question	Sign	Description of variable
1.	7.	+	lower rated effectiveness of the school in educating its students
2.	8.	+	less satisfaction with teaching or working in the school
3.	9.	+	greater likelihood of choosing a profession other than teaching if choice could be made again
		-	greater likelihood of choosing teaching again
4.	10.	+	greater desired increase in salary
5.	11.	+	lower rated effectiveness of the principal
6.	14.	+	higher age
7.	17.	+	greater number of years of teaching experience
8.	17.	+	greater number of years of experience in present school
9.	18.	+	greater number of years of teacher education for salary purposes

TABLE XVII

PEARSON PRODUCT MOMENT CORRELATIONS AMONG
NONSOCIOMETRIC INDIVIDUAL LEVEL VARIABLES

(N = 389)

Number	Number of variable from key								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1.	+1.000	+0.570*	+0.211*	+0.124*	+0.610*	-0.136*	-0.049	-0.043	+0.100
2.		+1.000	+0.256*	+0.151*	+0.598*	-0.203*	-0.118*	-0.103	+0.061
3.			+1.000	+0.144*	+0.181*	-0.200*	-0.179*	-0.088	+0.112*
4.				+1.000	+0.195*	-0.138*	-0.051	-0.056	+0.249*
5.					+1.000	-0.138*	-0.051	-0.056	+0.062
6.						+1.000	+0.803*	+0.491*	-0.123*
7.							+1.000	+0.579*	-0.014
8.								+1.000	-0.015
9.									+1.000

*Significant at the .05 level

KEY FOR TABLE XVIII

Number of variable	Number of question	Sign	Description of variable
1.	7.	+	lower rated effectiveness of the school in educating its students
2.	8.	+	less satisfaction with teaching or working in the school
3.	9.	+	greater likelihood of choosing a profession other than teaching if choice could be made again
		-	greater likelihood of choosing teaching again
4.	10.	+	greater desired increase in salary
5.	11.	+	lower rated effectiveness of the principal
6.	14.	+	higher age
7.	17.	+	greater number of years of teaching experience
8.	17.	+	greater number of years of experience in present school
9.	18.	+	greater number of years of teacher education for salary purposes
10.	15.	+	male
		-	female
11.	16.	+	presently married
		-	not presently married

TABLE XVIII
 POINT BISERIAL CORRELATIONS AMONG NONSOCIO-METRIC
 INDIVIDUAL LEVEL VARIABLES

(N = 389)

Number of variable	Number of variable	
	(10)	(11)
1.	+0.176*	-0.092
2.	+0.129*	-0.100
3.	+0.173*	-0.125*
4.	+0.452*	+0.067
5.	+0.134*	-0.132*
6.	-0.204*	+0.130*
7.	-0.055	+0.097
8.	-0.035	+0.120*
9.	+0.538*	+0.047

*significant at the .05 level

Table XIX shows the correlations between individual level sociometric scores and individual level nonsociometric variables. For the nonsociometric variables assumed to be continuous and normally distributed, the correlation coefficients are Pearson product moments. For the two dichotomous non-sociometric variables, the correlation coefficients are point biserial.

Test of Hypothesis One. Hypothesis One stated that the greater the instrumental-expressive incongruence scores for an individual, the greater will be his level of calculative involvement (remunerative compliance). In the case of the instrumental-expressive orientational incongruence score, the results were not significant. In the case of the instrumental-expressive positional incongruence score this hypothesis was supported at the .01 level of significance. Positional incongruence is considered to be a more accurate indication of the actual incongruence between a person's place in the instrumental structure of the school and his place in the expressive structure. The reason for this is that an individual's positional incongruence score is determined from responses given by every staff member except himself, whereas the orientational incongruence score is determined only by responses given by the respondent. The two individual level instrumental-expressive incongruence scores have about 6 per cent of their variance in common; it would appear that they each measure something different. The results here support Etzioni's contention that a person exhibiting calculative involvement toward the organization will interact instrumentally with a different group of people than he socializes with.

Test of Hypothesis Two. Hypothesis Two stated that the greater the

KEY FOR TABLE XIX

Number of variable	Number of question	Sign	Description of variable
1.	7.	+	lower rated effectiveness of the school in educating its students
2.	8.	+	less satisfaction with teaching or working in the school
3.	9.	+	greater likelihood of choosing a profession other than teaching if choice could be made again
		-	greater likelihood of choosing teaching again
4.	10.	+	greater desired increase in salary
5.	11.	+	lower rated effectiveness of the principal
6.	14.	+	higher age
7.	17.	+	greater number of years of teaching experience
8.	17.	+	greater number of years of experience in present school
9.	18.	+	greater number of years of teacher education for salary purposes
10.	15.	+	male
		-	female
11.	16.	+	presently married
		-	not presently married
12.	1. & 2.	+	instrumental-expressive orientational incongruence score
13.	1. & 2.	+	instrumental expressive positional incongruence score
14.	1.	+	instrumental orientational-positional incongruence score
15.	2.	+	expressive orientational-positional incongruence score

TABLE XIX

CORRELATIONS BETWEEN SOCIOMETRIC INDIVIDUAL LEVEL
SCORES AND NONSOCIOMETRIC INDIVIDUAL LEVEL VARIABLES

(N = 389)

Number of variable	Number of variable			
	(12)	(13)	(14)	(15)
1.	-0.121*	-0.082	+0.000	-0.092
2.	-0.157*	-0.066	+0.009	-0.135*
3.	-0.020	+0.006	+0.083	+0.035
4.	-0.064	+0.176*	+0.142*	+0.061
5.	-0.170*	-0.099	-0.012	-0.135*
6.	+0.047	-0.066	+0.013	+0.007
7.	+0.052	-0.022	+0.106	+0.030
8.	+0.043	+0.041	+0.024	+0.020
9.	+0.030	+0.213*	+0.219*	+0.207*
10.	-0.073	+0.160*	+0.145*	+0.090
11.	+0.003	+0.085	+0.002	-0.002

*significant at the .05 level

instrumental-expressive incongruence scores for an individual, the lower will be his rating of school effectiveness. In the case of the orientational incongruence score, the hypothesis is contradicted at the .05 level of significance. The corresponding correlation coefficient for the positional incongruence score is not significant. This means that the greater the similarity between the group of people an individual reports he communicates with on task matters and the group of people he reports he socializes with, the lower will be his estimate of school effectiveness. At first sight, this might appear to be at variance with Etzioni's theory, however, in deriving this hypothesis from the theory, it was assumed that the estimated effectiveness of the school could be used as a measure of actual effectiveness. As had already been pointed out, estimates of school effectiveness are not a reliable indication of actual effectiveness and, therefore, this cannot be considered a contradiction of Etzioni's theory.

The profile of the male teacher on Page lll shows that he considers the school less effective and has higher instrumental-expressive positional incongruence. This again is not a contradiction since positional incongruence and orientational incongruence are not the same. However, in examining Tables XX and XXI to see if Hypothesis Two has been supported separately for each sex, we find that the relationship between instrumental-expressive orientational incongruence and the rating of school effectiveness is not significant for males but it is significant at the .05 level for females. The result for females contradicts the original hypothesis. The correlation coefficient between instrumental-expressive positional incongruence and rating of school effectiveness is also significant and also contradicts the hypothesis for females. Thus, the results for Hypotheses Two are not significant for males but for females

KEY FOR TABLE XX

Number of variable	Number of question	Sign	Description of variable
1.	7.	+	lower rated effectiveness of the school in educating its students
2.	8.	+	less satisfaction with teaching or working in the school
3.	9.	+	greater likelihood of choosing a profession other than teaching if choice could be made again
		-	greater likelihood of choosing teaching again
4.	10.	+	greater desired increase in salary
5.	11.	+	lower rated effectiveness of the principal
12.	1. & 2.	+	instrumental-expressive orientational incongruence score
13.	1. & 2.	+	instrumental-expressive positional incongruence score
14.	1.	+	instrumental orientational-positional incongruence score
15.	2.	+	expressive orientational-positional incongruence score

TABLE XX
 SELECTED SOCIOMETRIC--NONSOCIOMETRIC INDIVIDUAL
 LEVEL CORRELATIONS FOR MALES

(N = 148)

Number of variable	Number of variable			
	(12)	(13)	(14)	(15)
1.	-0.048	-0.097	+0.058	-0.098
2.	-0.203*	-0.065	-0.045	-0.223*
3.	-0.025	-0.053	-0.182*	-0.031
4.	-0.002	+0.150	+0.204*	+0.032
5.	-0.106	-0.032	+0.047	-0.176*

*significant at the .05 level

KEY FOR TABLE XXI

Number of variable	Number of question	Sign	Description of variable
1.	7.	+	lower rated effectiveness of the school in educating its students
2.	8.	+	less satisfaction with teaching or working in the school
3.	9.	+	greater likelihood of choosing a profession other than teaching if choice could be made again
		-	greater likelihood of choosing teaching again
4.	10.	+	greater desired increase in salary
5.	11.	+	lower rated effectiveness of the principal
12.	1. & 2.	+	instrumental-expressive orientational incongruence score
13.	1. & 2.	+	instrumental-expressive positional incongruence score
14.	1.	+	instrumental orientational-positional incongruence score
15.	2.	+	expressive orientational-positional incongruence score

TABLE XXI
 SELECTED SOCIOMETRIC-NONSOCIOMETRIC INDIVIDUAL
 LEVEL CORRELATIONS FOR FEMALES

(N = 238)

Number of variable	Number of variable			
	(12)	(13)	(14)	(15)
1.	-0.155*	-0.131*	-0.101	-0.120
2.	-0.114	-0.115	+0.020	-0.083
3.	+0.003	+0.014	-0.043	+0.070
4.	-0.056	+0.082	-0.018	+0.016
5.	-0.195*	-0.176*	-0.070	-0.117

*significant at the .05 level

it is contradicted at the .05 level for both incongruence scores.

Test of Hypothesis Three. Hypothesis Three stated that the greater the instrumental-expressive incongruence scores for an individual, the lower will be his satisfaction with teaching. The results are not significant for either the orientational or positional scores for the group as a whole or for either sex.

Test of Hypothesis Four. Hypothesis Four stated that the greater the instrumental-expressive incongruence scores for an individual, the lower will be his satisfaction with the school. In the case of the orientational incongruence score this hypothesis is contradicted at the .01 level of significance. The correlation coefficient (-.157) yielded by this result indicates that satisfaction with teaching or working in the school is greater when the instrumental-expressive orientational incongruence score is high. Corresponding results for the positional incongruence score are not significant. The profile of the male teacher reveals that he is less satisfied with teaching in his school but exhibits high instrumental-expressive positional incongruence. In examining the relationship between satisfaction with teaching in the present school and instrumental-expressive orientational incongruence it is found that Hypothesis Four is contradicted at the .01 level for males but that the results are not quite significant for females.

Test of Hypothesis Five. Hypothesis Five stated that the greater the instrumental-expressive incongruence scores for an individual, the less effective he will consider the principal. In the case of the orientational

incongruence score, this hypothesis is contradicted at the .01 level of significance. The hypothesis is contradicted at the .05 level if the one-tailed test is applied to the positional incongruence score. The results definitely indicate that the more effective the individual considers the principal, the greater his instrumental-expressive incongruence scores will be. This cannot be considered a contradiction of Etzioni's theory due to the lack of validity inherent in assuming that the estimated effectiveness of the principal is a measure of his actual effectiveness. Here again, interesting results are obtained by examining the profile of the male teacher on Page 111. The male teacher shows high instrumental-expressive positional incongruence and estimates the principal as less effective. This would appear to contradict the previous results which state that people who have high instrumental-expressive incongruence estimate the principal as being more effective. Examining the results for this hypothesis separately for males and females in Tables XX and XXI leads to a resolution of this problem by showing that the results for males are not significant for either the orientational or positional incongruence scores. On the other hand, for females the finding is supported at the .01 level for both the orientational and positional incongruence scores. The results, then, are not significant for males but reject the hypothesis for females. The female teachers in this sample outnumber males by about two to one and, in this case, they have decisively influenced the results.

Unhypothesized Relationships. No hypotheses were made about the two orientational-positional incongruence scores; therefore, the two-tailed test must be applied in all cases to correlations involving them.

The instrumental orientational-positional incongruence score correlates positively with the desire for higher salary which was equated with calculative involvement. This is significant at the .01 level. This means that people who desire a greater increase in salary have a less accurate perception of their position in the instrumental structure of the school staff. It should be noted in the light of the also positive relationship between calculative involvement and positional incongruence. The correlation between calculative involvement and expressive orientational-positional incongruence is not significant. This relationship is complicated by certain characteristics of individuals that correlate with calculative involvement. The level of calculative involvement correlates inversely with the teacher's age and directly with the number of years of teacher education that he has. Males show a higher level of calculative involvement than do females.

The expressive orientational-positional incongruence score correlates at the .05 level of significance with satisfaction with all aspects of the teaching or working situation in the school. Satisfaction does not correlate significantly with instrumental incongruence. The less satisfied a person is with teaching in his school, the more accurate will be his perception of his position in the expressive structure of the school staff. An explanation for this is extremely difficult to offer, however, it seems reasonable to expect that people who are dissatisfied with their school would carry on less socialization with other school staff members, hence their position would be smaller. The size of a person's position is defined as the sum of his column in the first power matrix. If a person's

position in the expressive structure of the school staff is an extremely small one, it would probably be fairly easy to perceive. Thus, the perception of a person's position in the school staff may be a function of the size of that position. This suggests that the positional incongruence score needs revising to eliminate this systematic bias.

The relationship between satisfaction with the school and expressive incongruence is complicated by certain characteristics of individuals which are related to satisfaction with the school and which, in themselves, may help determine a person's positional incongruence. For example, there is a correlation, significant at the .01 level, between satisfaction and age. Females are more satisfied with the teaching or working situation in the school than are males. Even these two relationships contaminate each other in that the average age of females in the sample was greater than the average age of males.

The expressive orientational-positional incongruence score correlates with the estimated effectiveness of the principal at the .05 level. This relationship shows that the better a person's perception of his position in the expressive structure is, the less effective he estimates the principal to be. This relationship is also affected by characteristics of teachers which correlate with ratings of principal effectiveness. Older teachers rate the principal more effective as do females. Persons presently married rate the principal more effective than those not presently married. Since both orientational and positional incongruence also correlate with estimated principal effectiveness, it significantly relates to three of the four individual level sociometric scores.

Besides estimated effectiveness of the principal, two nonsociometric

variables correlated significantly with three of the four sociometric indicators. These two were sex and years of teacher education.

Since females were designated as zero and males as one for the point biserial correlation between sex and the sociometric variables, the three positive correlations show that instrumental-expressive positional incongruence, instrumental orientational-positional incongruence, and expressive orientational-positional incongruence are all greater for males than for females. These are significant at the .01, .01, and .10 levels respectively. The latter two indicate that women have a more accurate perception of their position in the school's instrumental and expressive structures than do men. This corresponds with the common belief that women are more sensitive and more socially perceptive than men. Thus, their orientations in both the instrumental and expressive structures more closely resemble their positions than is the case for males. The first of the three relationships indicate that females have more congruent instrumental and expressive positions in the school staff than do males. This would mean, for example, that a woman, desiring to discuss task-related matters, would be more likely to consult a person that she socializes with in preference to one she did not socialize with than would a man. It could also mean that women, in their own minds, draw less of a distinction between social communication and task-oriented communication. As pointed out earlier, the highly significant correlations between sex and three of the four individual level sociometric scores has undoubtedly influenced the relationship between the sociometric scores and other variables which themselves correlate with sex. All five of the attitudinal variables as well

as age and years of teacher education correlate significantly with sex.

The three highest sociometric-nonsociometric correlations at the individual level all had years of teacher education as the nonsociometric variable. These correlation coefficients, all of them significant at the .01 level, show a positive relationship between years of teacher education and instrumental-expressive positional incongruence, instrumental orientational-positional incongruence, and expressive orientational-positional incongruence. The first of the three relationships means that the more teacher education a person has, the greater is the difference between his position in the instrumental structure and his position in the expressive structure. The latter two mean that the more teacher education a person has, the more he misperceives his positions in both the instrumental and expressive structures of the school staffs. A number of contaminating variables are revealed by the profile of the teacher with more teacher education on Page 112. The profile shows that he is a male and is younger than the average teacher. The relationship between years of teacher education and sex is particularly strong. These two variables have almost 30 per cent of their variance in common. The findings with respect to teacher education are particularly difficult to explain. Why should more years of teacher education result in a less accurate perception of one's position in both the instrumental and expressive structures of the school staff? Why should more years of teacher education result in greater instrumental-expressive positional incongruence? Possibly teaching in today's schools is essentially a solitary activity in the sense that it doesn't involve other teachers and the teachers with more teacher education are less involved and less concerned with communica-

tion with other staff members than are the less qualified teacher; but this is merely speculation. A more rigorous examination of these data would necessarily involve a partial correlational analysis to sort out inter-related variables such as sex, age, and years of teacher education.

CHAPTER VI

CONCLUSIONS AND IMPLICATIONS

Sociometric Scores and Indices

The results of this study show that the original definitions of the seven sociometric incongruence scores are useful. The assumption that the number of responses made by an individual would not be a function of the total number of persons on the school staff was also useful but not entirely correct. These scores, as defined, have at least two disadvantages. Firstly, they are difference scores and as such tend to be unreliable. The second problem is the very high correlations among the three school level indices as shown in Table IX on Page 67. For example, the common variance between the instrumental-expressive incongruence index and the expressive asymmetry index is 74 per cent. The lowest common variance held between any two school level indices was 25 per cent between the instrumental-expressive incongruence index and the instrumental asymmetry index.

Twenty-five per cent was also the greatest amount of variance held in common between two individual level sociometric scores, the instrumental-expressive orientational incongruence score and the expressive orientational-positional incongruence score. There are two possible explanations for the greater interrelatedness of the school level indices than individual level scores. The school level indices may be more intrinsically interrelated due to characteristics of either the indices themselves or the social systems that were examined by the indices. The second possibility is that the individual level scores are less reliable than the school level scores

since they involve fewer responses per score and so the lower correlation coefficients between individual level scores would be the result of greater randomness in these scores.

If the school level sociometric measures are used in future studies, consideration should be given to using the total number of responses in the matrix as the divisor in the index definitions. The divisor used in this study was the school staff size and its purpose was to adjust the value of the scores so they would be less related to the staff size. However, the scores so adjusted, called the indices, still correlated positively with staff size (See Table VII). Dividing the school level scores by the square of the size of the school staff resulted in indices showing a high negative correlation with staff size. For this reason it is suggested that the total number of ones in the matrix for each school, that is, the total number of positive responses, should be used as the divisor for that school. It is hoped this would further reduce the correlation between the school level index and the size of the school.

A similar problem occurs at the individual level. Although this was not rigorously analysed, it seems reasonable to believe that the values of individual level incongruence scores are a function of the person's orientation and position. It is suggested that individual level incongruence indices be defined as the corresponding scores divided by some function of the size of the person's orientation and/or position. The size of a person's orientation is defined as his row total and the size of his position as his column total.

Another useful analysis would be one showing the effect of personal

variables such as sex, age, or administrative position on the size of the orientation and position. An examination of the matrices revealed that administrators had much larger positions than non-administrators. This seems reasonable since it is the administrators job to communicate with his staff members on task matters. This would result in a large instrumental position, and any instrumental-expressive integration would tend to result in a large expressive position as well. Other personal or attitudinal variables may relate strongly to orientational or positional size.

The use of matrices to represent sociometric responses in an organization and the application of matrix arithmetic to these sociometric responses suggest a similar procedure at the individual level. An examination of a sociomatrix will reveal that a person's orientation is a row vector and his position a column vector. The meaning of the various operations of vector analysis such as vector addition and multiplication, when applied to sociovectors, remains to be determined. Operations performed between vectors and matrices could also result in something meaningful about individuals and social systems.

Implications of the Sources of Variance

The analysis locating the sources of variances suggests some important conclusions. The results were significant for all nine sociometric variables and showed that the major source of variance was within the schools rather than among the schools in all cases.

In the case of the estimated effectiveness rating of the school, one would expect most of the variance to occur among schools since actual school effectiveness is a constant for a given school. In fact, most of the

variance occurs within the schools, indicating that the teachers within a school do not agree on how effective their school is. To put it in other words, the effectiveness rating of a school given by a teacher depends more on the teacher himself than on the characteristics of the school. Two attributes of teachers known to influence their ratings of school effectiveness are age and sex. Tables XV and XVI on pages 80 and 82 show that females and older teachers rate the school more effective than do male and younger teachers. Because of the tremendous difference of opinion on the effectiveness of a school among the teachers in that school, the mean effectiveness rating cannot be considered a reliable indication of the actual effectiveness. Since the mean effectiveness rating of the school is not reliable, it cannot be valid and cannot be equated to a more objective rating of school effectiveness.

Deciding the expected location of the major source of variance in the nonsociometric variable, satisfaction with working or teaching in the present school, depends on whether one believes this variable to be influenced more by the school or the individual. This analysis indicates that satisfaction is much more a function of the individual than the school. The satisfaction of a teacher on a school staff would appear not to depend on his fellow teachers, the principal, or school policy, in any objective sense. This means, for example, that selecting from various behaviors exhibited by principals in the schools in this sample, there can be no objectively good form of principal behavior in the sense that it will make all teachers satisfied. Rather, of the various principal behaviors exhibited, some types may make certain teachers satisfied and other types

will make other teachers happy but no single behavior pattern will provide satisfaction for all teachers. This is also true of the characteristics of fellow teachers, school policies, and any other factors which are constant for a school. It would seem that the major variable in determining whether an individual is satisfied with his working condition is the individual himself.

It would be expected that an individual's satisfaction with his choice of profession would be a function of himself rather than of any external factors. This appears to be the case since the 'F' ratio for this variable was the second largest and indicated that most of the variance on satisfaction with choice of profession occurs within the schools.

Calculative involvement or the desired increase in salary is also very much a function of the individual. The highest 'F' ratio for the nine variables occurred with calculative involvement.

One would hope that most of the variance in the nonsociometric measure, estimated effectiveness of the principal, would occur among schools rather than within schools, thereby allowing a differentiation of various principals according to effectiveness. This was not the case. Nearly all of the variance occurred within the schools, indicating that the different teachers in a school have a very different idea of how effective their principal is. The rating of principal effectiveness is much more a function of the person who is doing the rating than of the principal who is being rated. Table XVII shows that older teachers, female teachers, and teachers presently married rate the principal more effective than young, male or not presently married teachers. One is forced to conclude that

an effectiveness rating for a principal based on the mean of the estimated effectiveness ratings given by his teachers is an extremely unreliable and hence invalid indication of his actual effectiveness.

The three highest 'F' ratios occurred for age, satisfaction with choice of profession, and calculative involvement, respectively. For these variables, most of the variance would be expected among individuals and this corresponds with the empirical results.

The smallest 'F' ratios occurred for estimated effectiveness of the school, estimated effectiveness of the principal, and years of teacher education for salary purposes. The first two of these variables were ones which should, theoretically, have been constant for each school. Therefore, it seems reasonable that their 'F' ratios are the smallest. The explanation for the small 'F' ratio for years of teacher education would seem to be the different requirements of different types of schools for different levels of teacher education.

The original intention of using the means of teacher estimates of principal and school effectiveness as ratings of actual effectiveness has clearly been demonstrated invalid. This has invalidated the assumed relationship between Etzioni's theory and many of the hypotheses.

Teacher Profiles

Examination of the individual level items resulted in a clustering of the significant correlation coefficients to produce three statistical teacher profiles. The name chosen for each profile was that of one of the more objectively and accurately defined characteristics. The profiles, which are outlined below are of the male teacher, the older teacher, and the teacher with more teacher education. Accompanying each trait in the

profile is the absolute value of the correlation coefficient between that trait and the one represented by the profile title and the significance of the correlation coefficient. Although other profiles are possible, these three are the most significant and the least redundant. These profiles were extremely useful in identifying contaminating variables.

The male teacher:

(.176), (.01) considers the school less effective.

(.129), (.05) is less satisfied with teaching conditions in the school.

(.173), (.01) is less likely to choose teaching again as his profession.

(.452), (.01) shows greater calculative involvement, that is, a greater desired increase in salary.

(.134), (.05) considers the principal less effective.

(.204), (.01) is younger than the average teacher.

(.538), (.01) has more years of teacher education.

(.160), (.01) shows higher instrumental-expressive positional incongruence.

(.145), (.01) shows higher instrumental orientational-positional incongruence.

(.090), (.1) shows higher expressive orientational-positional incongruence.

The older teacher:

(.136), (.05) considers the school more effective.

(.203), (.01) is more satisfied with teaching conditions in the school.

(.200), (.01) is more likely to choose teaching again as his profession.

(.138), (.05) shows lower calculative involvement, that is, a lower desired increase in salary.

(.210), (.01) considers the principal more effective.

(.204), (.01) is a female.

(.130), (.05) is married.

(.803), (.01) has had more teaching experience.

(.491), (.01) has had more teaching experience in the present school.

(.123), (.05) has fewer years of teacher education.

The teacher with more teacher education:

(.100), (.1) considers the school less effective.

(.112), (.05) is less likely to choose teaching again as his profession.

(.176), (.01) shows greater remunerative compliance, that is, a greater desired increase in salary.

(.123), (.05) is younger than the average teacher.

(.538), (.01) is a male.

(.213), (.01) shows higher instrumental-expressive positional incongruence.

(.219), (.01) shows higher instrumental orientational-positional incongruence.

(.207), (.01) shows higher expressive orientational-positional incongruence.

Results in Relation to Etzioni's Theories

According to this study, the instrumental-expressive dichotomy proposed by Etzioni is definitely useful. The statistical significance

of this was not found and it should be pointed out that randomness in responding could result in a large instrumental expressive dichotomy with this type of analysis. Information concerning the reliability of the sociometric responses would be necessary to determine the significance of the incongruence scores and indices. Nevertheless, the relationships between the measures of the dichotomy and other variables suggest that it is a useful concept.

The expectation that the greater are the instrumental-expressive incongruence scores for an individual, the greater his level of calculative involvement will be is a direct implication of Etzioni's work. This was supported in the case of the individual level positional incongruence scores. An individual's positional incongruence score is a function of the responses from every school staff member except himself, whereas his orientational incongruence score is a function of himself only. Therefore, the positional incongruence score could be assumed to have more validity than the orientational incongruence score.

No significant results were obtained in the attempt to relate dissatisfaction with the teaching profession with instrumental-expressive incongruence.

Contradictory results were obtained in relating instrumental-expressive incongruence to dissatisfaction with the school. Hypothesis Four was contradicted at the .01 level in the case of the instrumental-expressive orientational incongruence scores. Analysis revealed that males have higher instrumental-expressive positional incongruence scores than females and that males are more alienated from the school than females. It was also shown that persons having high orientational incongruence scores show

less alienation from the school. In an attempt to resolve this apparent discontinuity between the positional and orientational incongruence scores a separate analysis was made for males and females. Testing Hypothesis Four for males only yielded no significant results. For females, Hypothesis Four was contradicted as it was for the group as a whole, in the case of the orientational incongruence scores. The results for females on the positional incongruence dimension were not significant. Males do not respond in the same way as females and orientational incongruence is not the same as positional incongruence. In relating these results to Etzioni's theory, no definite conclusions can be drawn.

Hypothesis Five relating instrumental-expressive incongruence to estimated principal effectiveness is based on the assumption that alienation from the organization implies dissatisfaction with the administration and that this implies a low opinion of the effectiveness of the administration. The discontinuity between the orientational and positional incongruence scores noted previously for Hypothesis Four was found here in an even more pronounced way since both orientational and positional incongruence scores correlated positively with estimated principal effectiveness. The analysis of Hypothesis Five by sex revealed no significant results for males. For females, instrumental-expressive orientational incongruence correlated with ratings of principal effectiveness at the .01 level. Instrumental-expressive positional incongruence correlated with ratings of principal effectiveness at the .05 level. Here again, no conclusions can be drawn concerning the relationship of these results to Etzioni's theory.

One factor that was noted in many cases was the difference between

the responses of males and females. In the analysis of organizations, Etzioni and others ignore the possibility that there may be systematic differences among participants in a given organization as to their type of involvement. This study suggests this type of difference between males and females doing the same kind of work in the same school for the same pay.

Implications for Educational Administration

The main implication of this study for educational administration may be the importance of the separate existence of an instrumental structure and an expressive structure in each school staff. Not only the existence of the dichotomy in the school staff but its individual level components are important factors in the social interaction that takes place within the school.

In examining the instrumental-expressive dichotomy, this study has pointed out a number of important correlates such as variation in compliance modes and accuracy of perception of position. The educational administrator should recognize that the compliance modes of male and female teachers differ significantly and that their positions in the instrumental and expressive structures are not the same. For example, the positions of a woman in the instrumental and expressive structures will be more alike than the positions of a man in these two structures. The female teacher appears to socialize more with the people with whom she discusses task matters than does the male teacher. Besides having more congruent instrumental and expressive positions, females also have a more accurate perception of their positions in the two structures.

Another difference between males and females which is important to the educational administrator is the difference in the type of involvement. Males exhibit a much higher degree of calculative involvement. Principals, then, should expect that males will be far more concerned with matters related to salary than will females. This study, however, failed to separate the effects that sex and years of teacher education have on the relationship between involvement and the sociometric scores.

Another important implication of this study for the practice of educational administration results from the lack of consensus of teacher opinion concerning the effectiveness of the principal and the school. It was also shown that a teacher's ratings of school and principal effectiveness correlate with personal characteristics of the teacher himself. This suggests that these ratings tend to be invalid and that many of the factors which are decisive in determining the ratings are beyond the control of administrators.

The nonsociometric variables which showed the most profound relationship with the sociometric indicators were perceived effectiveness of the principal, sex, and years of teacher education. Principals should keep in mind that the latter two, particularly, which are objectively measurable have a great influence on the attitudes and socialization patterns of teachers. This study found that years of teacher education had the greatest effect on the sociometric variables.

Recommendations

In retrospect, the lack of significant results at the institutional or school level seems inevitable due to the small sample size. At the same

time the results at the individual level suggest that with a sufficient sample size significant results at the school level are possible. A larger sample of schools is, therefore, recommended.

In the light of the recommendations given so far in this study a number of possibilities exist for further research. Among these is the re-examination of the definitions of school level indices and consideration of the possibility of defining individual level indices. Part of this re-examination would be selecting a divisor for the indices which would accurately eliminate systematic relationships with extraneous variables. Another possibility involves individual level analysis treating the orientations as row vectors and the positions as column vectors.

The sociomatrix technique for the analysis of organizations holds much promise for research into the instrumental-expressive dichotomy and other problems in this field.

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APPENDIX A

INITIAL CORRESPONDENCE WITH SCHOOLS



January, 1966

The purpose of this letter is to request that you give consideration to the possibility of participating in a research project which I am planning to carry out. I realize that you receive numerous requests such as this and that you may find the demand to be too heavy. However, I trust that my request is such that you will be able to give it consideration; I would be very grateful for your assistance.

I have enclosed a copy of the questionnaire which I hope to have completed in about twenty-five schools of varying size and type. The purpose of the research is to obtain information about interaction patterns in schools and to derive various indices concerning the social structure of the school. The nature of our work this year is largely exploratory in that we are attempting to determine the possible significance of the indices which might be derived through the application of these procedures. Ultimately we hope to be able to use this approach in the analysis of various organizational and administrative characteristics.

The procedures involved in this type of study would be as follows. All the members of a school staff would respond to the questionnaire; this suggests that it might best be completed at a staff meeting. It is our intention to visit all of the schools involved in the study for the purpose of collecting the data. The members of a school staff will be assigned a code number, and all responses to items will be in terms of these numbers. This will facilitate the analysis and also assure anonymity; we can also assure you that participating schools will remain anonymous. Furthermore, there will be no follow-up activity or demands of any type other than those associated with the completion of the enclosed instrument.

If you are willing to participate in this study, I will require the information on the enclosed form together with a complete list of your staff including librarian, secretary, and part-time teachers but not substitute teachers. you feel that it would be advisable for me to obtain the approval of your superintendent, I shall contact him but only if you are

willing to participate.

Thank you for considering this request. If you are willing to participate, I shall contact you again after I receive your reply. If you are unable to participate, thank you for giving it your consideration.

Yours sincerely,

E. Miklos
Associate Professor

EM/ss

TO: E. Miklos

FROM: _____

RE: Research Request

1. The staff _____ is _____ willing to participate.
_____ is not

If you are willing to participate, please complete the questions below and enclose a complete list of staff members.

2. On what day or days of the week would it be most convenient for the staff to complete the questionnaire at a regular or special staff meeting? Specific date to be arranged.

3. Please indicate at what time of day it would be most convenient to hold this meeting.

4. Other comments.

5. School Telephone Number _____.

APPENDIX B

PROVISIONAL SCHOOL ORGANIZATION QUESTIONNAIRE

SCHOOL ORGANIZATION QUESTIONNAIRE

The purpose of this questionnaire is to provide information on various organizational characteristics of schools, that is, information on channels of communication, patterns of reliance, and so on.

It is important that your answers be independent so please do not discuss them with other teachers.

You will be provided with a separate staff list for your school on which each staff member has been assigned a number. In completing this form please indicate yourself and other staff members by number and not by name. This ensures anonymity and facilitates computer analysis of the data. All information given in this questionnaire will be held in the strictest confidence.

SPECIAL NOTE FOR SCHOOL SECRETARIES: Omit all questions that do not apply to you. Omit the following questions:

6, 7, 9, 10, 13, 15, 16, 21.

SECTION A Answer the following questions as indicated.

1. School Code _____ 2. Your number _____
3. Sex (1) Male _____ (2) Female _____
4. Age in years: _____
5. Marital Status: (Please check the correct response)
(1) Single _____ (3) Widowed _____
(2) Married _____ (4) Divorced _____
6. Years of teacher education: (Circle the correct number. Drop fractional years)
1 2 3 4 5 6 7
7. Total years of teaching experience: (Count this school year as a full year) _____.
8. Years of teaching experience in this school: (Count this school year as a full year) _____.
9. Circle the one grade in which you do most of your teaching this year.
1 2 3 4 5 6 7 8 9 10 11 12
10. If you are teaching in a departmentalized junior or senior high school please list the subjects that you teach.

11. Please check any of the following positions that you hold.
(1) Principal _____ (3) Vice-principal _____
(2) Department Head _____ (4) School Secretary _____
(5) Other (Please specify) _____
12. If you are a school secretary or relieving teacher how many hours per week do you work at this school?
If you are a vice-principal or principal how many hours per week are you allotted for administration?

13. If you are a department head what is your department?
 If you are a principal or vice-principal in what division do you specialize, if any? That is, are you a primary specialist, a Division II specialist, etc.?
-

SECTION B

For the questions in Section B circle the number of each person with whom you interact in the way specified.
 There are no lower or upper limits to the number of choices for each question. Choose as few or as many people as you feel are necessary to reply fully. This survey is limited to the school staff so all responses on Questions 14 to 19 must be staff members.

14. During the course of a typical school week, in school or out of school, with which individuals do you discuss general school matters (teaching duties, school events, school policies, school programs, students, etc.)?

1	2	3	4	5	6	7	8	9	10	11	12
13	14	15	16	17	18	19	20	21	22	23	24
25	26	27	28	29	30	31	32	33	34	35	36
37	38	39	40	41	42	43	44	45	46	47	48
49	50	51	52	53	54	55	56	57	58	none	

15. With which individuals do you socialize informally during recesses, during noon-hours, and/or before and after school?

1	2	3	4	5	6	7	8	9	10	11	12
13	14	15	16	17	18	19	20	21	22	23	24
25	26	27	28	29	30	31	32	33	34	35	36
37	38	39	40	41	42	43	44	45	46	47	48
49	50	51	52	53	54	55	56	57	58	none	

16. If you had a problem concerning discipline in your classroom from whom would you likely seek advice?

1	2	3	4	5	6	7	8	9	10	11	12
13	14	15	16	17	18	19	20	21	22	23	24
25	26	27	28	29	30	31	32	33	34	35	36
37	38	39	40	41	42	43	44	45	46	47	48
49	50	51	52	53	54	55	56	57	58	none	

17. If you had a problem concerning the organization of teaching material, teaching methods, tests, or assignments, from whom would you likely seek advice?

1	2	3	4	5	6	7	8	9	10	11	12
13	14	15	16	17	18	19	20	21	22	23	24
25	26	27	28	29	30	31	32	33	34	35	36
37	38	39	40	41	42	43	44	45	46	47	48
49	50	51	52	53	54	55	56	57	58	none	

18. If you had a problem concerning the interpretation of school policies and regulations, from whom would you likely seek advice?

1	2	3	4	5	6	7	8	9	10	11	12
13	14	15	16	17	18	19	20	21	22	23	24
25	26	27	28	29	30	31	32	33	34	35	36
37	38	39	40	41	42	43	44	45	46	47	48
49	50	51	52	53	54	55	56	57	58	none	

19. In your opinion, which individuals in this school are influential in initiating changes in general school practices such as testing programs, school regulations, school activities, etc.?

1	2	3	4	5	6	7	8	9	10	11	12
13	14	15	16	17	18	19	20	21	22	23	24
25	26	27	28	29	30	31	32	33	34	35	36
37	38	39	40	41	42	43	44	45	46	47	48
49	50	51	52	53	54	55	56	57	58	none	

SECTION C

Answer the following questions by checking one of the possible alternatives.

20. Compared with other schools known to you, how affective do you judge your school to be in educating the students who come to it?

- (1) outstanding_____
- (2) very good_____
- (3) slightly above average_____
- (4) slightly below average_____
- (5) poor_____
- (6) very poor_____

21. How well satisfied are you with all aspects of your teaching situation in this school?

- (1) enthusiastic_____
- (2) satisfied_____
- (3) fairly well satisfied_____
- (4) somewhat dissatisfied_____
- (5) dissatisfied_____
- (6) very dissatisfied_____

22. How effective do you consider your principal to be in performing all the various functions which he should perform? (This item is for research purposes only and even averages of scores are strictly confidential)

- (1) outstanding_____
- (2) very good_____
- (3) slightly above average_____
- (4) slightly below average_____
- (5) poor_____
- (6) very poor_____

THANK YOU VERY MUCH FOR YOUR COOPERATION IN COMPLETING THIS FORM. PLEASE PLACE THE QUESTIONNAIRE IN THE ENVELOPE AND SEAL.

APPENDIX C

REVISED SCHOOL ORGANIZATION QUESTIONNAIRE

SCHOOL ORGANIZATION QUESTIONNAIRE

The purpose of this questionnaire is to provide information on various organizational characteristics of schools, that is, information on channels of communication, patterns of reliance, and so on.

It is important that your answers be independent so please do not discuss them with other teachers.

You will be provided with a separate staff list for your school on which each staff member has been assigned a number. In completing this form please indicate yourself and other staff members by number and not by name. This ensures anonymity and facilitates computer analysis of the data. All information given in this questionnaire will be held in the strictest confidence.

* SCHOOL SECRETARIES and FULL-TIME LIBRARIANS should omit all questions marked with an asterick.

School Code Number_____ Your number_____

SECTION A

For the questions in Section A circle the number of each person with whom you interact in the way specified. There are no lower or upper limits to the number of choices for each question. Choose as few or as many people as you feel are necessary to reply fully. Please circle "none" if this is your answer. This survey is limited to the school staff so all responses on Questions 1 to 6 must be staff members.

1. During the course of a typical school week, in school or out of school, with which individuals are you most likely to discuss general school matters (teaching duties, school events, school policies, school program, students, etc.)?

1	2	3	4	5	6	7	8	9	10	11	12	13
14	15	16	17	18	19	20	21	22	23	24	25	26
27	28	29	30	31	32	33	34	35	36	37	38	39
40	41	42	43	44	45	46	47	48	49	50	NONE	

2. With which individuals are you most likely to socialize with informally during recesses, during noon-hours, and/or before and after school hours?

1	2	3	4	5	6	7	8	9	10	11	12	13
14	15	16	17	18	19	20	21	22	23	24	25	26
27	28	29	30	31	32	33	34	35	36	37	38	39
40	41	42	43	44	45	46	47	48	49	50	NONE	

- *3. If you had a problem concerning discipline in your classroom from whom would you likely seek advice?

1	2	3	4	5	6	7	8	9	10	11	12	13
14	15	16	17	18	19	20	21	22	23	24	25	26
27	28	29	30	31	32	33	34	35	36	37	38	39
40	41	42	43	44	45	46	47	48	49	50	NONE	

- *4. If you had a problem concerning the organization of teaching materials, teaching methods, tests, or assignments, from whom would you likely seek advice?

1	2	3	4	5	6	7	8	9	10	11	12	13
14	15	16	17	18	19	20	21	22	23	24	25	26
27	28	29	30	31	32	33	34	35	36	37	38	39
40	41	42	43	44	45	46	47	48	49	50	NONE	

5. If you had a problem concerning the interpretation of school policies and regulations, from whom would you likely seek advice?

1	2	3	4	5	6	7	8	9	10	11	12	13
14	15	16	17	18	19	20	21	22	23	24	25	26
27	28	29	30	31	32	33	34	35	36	37	38	39
40	41	42	43	44	45	46	47	48	49	50	NONE	

6. In your opinion, which individuals in this school are most influential in initiating changes in general school practices such as testing programs, school regulations, school activities, etc.?

1	2	3	4	5	6	7	8	9	10	12	12	13
14	15	16	17	18	19	20	21	22	23	24	25	26
27	28	29	30	31	32	33	34	35	36	37	38	39
40	41	42	43	44	45	46	47	48	49	50	NONE	

SECTION B

Answer each of the following questions by checking one of the possible alternatives. PRINCIPALS, omit Question 11.

7. Compared with other schools known to you, how effective do you judge your school to be in educating the students who come to it?

(1) outstanding_____

(2) very good_____

(3) slightly above average_____

(4) slightly below average_____

(5) poor_____

(6) very poor_____

8. How well satisfied are you with all aspects of your teaching or working situation in this school?

- (1) enthusiastic_____
- (2) satisfied_____
- (3) fairly well satisfied_____
- (4) somewhat dissatisfied_____
- (5) dissatisfied_____
- (6) very dissatisfied_____

*9. If you could choose your profession again, would you choose teaching, knowing what you do now about teaching?

- (1) definitely yes_____
- (2) probably yes_____
- (3) don't know_____
- (4) probably no_____
- (5) definitely no_____

10. How much salary do you feel you should be receiving for your present job?

- (1) less than my present salary_____
- (2) about as much as my present salary_____
- (3) between \$100 and \$1000 per year more than my present salary_____
- (4) between \$1000 and \$2000 per year more than my present salary_____
- (5) more than \$2000 per year more than my present salary_____

11. How effective do you consider your principal to be in performing all the various functions which he should perform? (This item is for research purposes only and even averages of scores are strictly confidential)

- (1) outstanding_____
- (2) very good_____
- (3) slightly above average_____
- (4) slightly below average_____
- (5) poor_____
- (6) very poor_____

SECTION C

Answer the following questions as indicated.

12. School Code_____ 13. Your number_____ 14. Age in years_____

15. Sex: (1) Male_____ (2) Female_____ (Please check correct one)

16. Marital Status: (1) Single_____ (2) Married_____

(3) Widowed_____ (4) Divorced_____

17. For this question, count this school year as a full year.

*Total years of teaching experience_____

Years of experience in this school_____

- *18. Years of teacher education for salary purposes: (Circle the correct number. Drop fractional years)

1 2 3 4 5 6 7

- *19. Circle the one grade in which you spend most of your teaching time this year.

1 2 3 4 5 6 7 8 9 10 11 12

- *20. Circle all the other grades that you teach this year.

1 2 3 4 5 6 7 8 9 10 11 12

- *21. If you are teaching in a departmentalized junior or senior high school please list the subjects that you teach.
(Be specific: eg. Math 10 & 20 and Grade 7 science)

-
22. Please check any of the following positions that you hold.

(1) principal _____ (2) vice-principal _____
 (3) department head _____ (4) school secretary _____
 (5) librarian _____ (6) guidance counsellor _____
 (7) relieving teacher (not substitute teacher) _____
 (8) other administrative position (please specify) _____

23. If you are a school secretary or relieving teacher how many hours per week do you work at this school?

If you are a vice-principal or principal how many hours per week are you allotted for administration?

If you act as librarian or guidance counsellor how many hours per week are you allotted to perform this function?

-
24. If you are a department head what is your department?

If you are a principal or vice-principal in what division do you specialize, if any? That is, are you a primary specialist, a Division II specialist, etc.?

APPENDIX D

SUMMARY OF SELECTED DESCRIPTIVE DATA

SECTION B

Answer each of the following questions by checking one of the possible alternatives. PRINCIPALS, omit Question 11.

7. Compared with other schools known to you, how effective do you judge your school to be in educating the students who come to it?

(1) outstanding	<u>17</u>	no reply	<u>6</u>
(2) very good	<u>178</u>		
(3) slightly above average	<u>150</u>		
(4) slightly below average	<u>30</u>		
(5) poor	<u>6</u>		
(6) very poor	<u>2</u>		

8. How well satisfied are you with all aspects of your teaching or working situation in this school?

(1) enthusiastic	<u>61</u>	no reply	<u>3</u>
(2) satisfied	<u>148</u>		
(3) fairly well satisfied	<u>104</u>		
(4) somewhat dissatisfied	<u>56</u>		
(5) dissatisfied	<u>11</u>		
(6) very dissatisfied	<u>6</u>		

- *9. If you could choose your profession again, would you choose teaching, knowing what you do now about teaching?

(1) definitely yes	<u>181</u>	no reply	<u>25</u>
(2) probably yes	<u>127</u>		
(3) don't know	<u>14</u>		
(4) probably no	<u>33</u>		
(5) definitely no	<u>09</u>		

10. How much salary do you feel you should be receiving for your present job?

(1) less than my present salary	<u>1</u>	no reply	<u>4</u>
(2) about as much as my present salary	<u>96</u>		
(3) between \$100 and \$1000 per year more than my present salary	<u>162</u>		
(4) between \$1000 and \$2000 per year more than my present salary	<u>86</u>		
(5) more than \$2000 per year more than my present salary	<u>40</u>		

11. How effective do you consider your principal to be in performing all the various functions which he should perform? (This item is for research purposes only and even averages of scores are strictly confidential)

(1) outstanding 161 no reply 24
 (2) very good 155
 (3) slightly above average 90
 (4) slightly below average 40
 (5) poor 13
 (6) very poor 6

SECTION C

Answer the following questions as indicated.

12. School Code _____ 13. Your number _____ 14. Age in years _____
 no reply 3
15. Sex: (1) Male 148 (2) Female 238 (Please check correct one)
16. Marital Status: (1) Single 59 (2) Married 308 No reply 4
 (3) Widowed 12 (4) Divorced 6
17. For this question, count this school year as a full year.
 *Total years of teaching experience _____
 Years of experience in this school _____
- *18. Years of teacher education for salary purposes: (Circle the correct number. Drop fractional years)
 1 2 3 4 5 6 7
- *19. Circle the one grade in which you spend most of your teaching time this year.
 1 2 3 4 5 6 7 8 9 10 11 12
- *20. Circle all the other grades that you teach this year.
 1 2 3 4 5 6 7 8 9 10 11 12
- *21. If you are teaching in a departmentalized junior or senior high school please list the subjects that you teach.
 (Be specific: eg. Math 10 & 20 and Grade 7 science)
-

22. Please check any of the following positions that you hold.

(1) principal 20 (2) vice-principal 23
 (3) department head 9 (4) school secretary 16
 (5) librarian 13 (6) guidance counsellor 5
 (7) relieving teacher (not substitute teacher) 3
 (8) other administrative position (please specify) 3
 no reply 297

TABLE XXII
AGES OF SCHOOL STAFF MEMBERS IN THE SAMPLE

Age range	Number of teachers
10 - 19	0
20 - 29	121
30 - 39	75
40 - 49	77
50 - 59	82
60 - 69	22
70 - 79	1
No reply	11

TABLE XXIII
TOTAL NUMBER OF YEARS OF TEACHING EXPERIENCE
OF TEACHERS IN THE SAMPLE

Number of years	Number of persons
1 - 9	164
10 - 19	118
20 - 29	50
30 - 39	27
40 - 49	3
No reply	27

TABLE XXIV
YEARS OF EXPERIENCE IN THEIR PRESENT SCHOOL OF
SCHOOL STAFF MEMBERS IN THE SAMPLE

Number of years	Number of staff members
1	103
2	59
3	53
4	25
5 - 9	76
10 - 19	47
20 - 29	5
30 - 39	1
No reply	20

TABLE XXV
YEARS OF TEACHER EDUCATION FOR SALARY PURPOSES
OF TEACHERS IN THE SAMPLE

Number of years	Number of teachers
1	117
2	74
3	41
4	89
5	26
6	12
7	2
No reply	28

TABLE XXVI
GRADE LEVELS AT WHICH TEACHERS IN THE SAMPLE
SPEND MOST OF THEIR TEACHING TIME

Grade level	Number of teachers
1	32
2	26
3	24
4	25
5	25
6	28
7	36
8	36
9	47
10	38
11	25
12	18
No reply	29

APPENDIX E

LETTER OF THANKS



Dear

We wish to extend our thanks to you and to the members of your school staff for participating in our research project. The cooperation which we received from staffs and the courtesies which were extended to us made the task of data collection a very pleasant experience.

Thank you for your time and effort; please do not hesitate to call on us if we can ever be of assistance to you.

Best wishes for a successful and rewarding school year.

Yours sincerely,

E. Miklos
Associate Professor

L. M. Bezeau
Research Assistant

EM/ss

APPENDIX F

STATEMENT OF RESULTS FOR PARTICIPATING SCHOOLS

Dear School Staff Member:

Analysis of the "School Organization Questionnaire" which you and your fellow staff members completed earlier this year has been undertaken and we are now able to report some results. For reference purposes we have attached a copy of the questionnaire to this report.

Responses to the first two questions from each school, which concerned communication about teaching matters and socialization were constructed into a grid with the rows representing the persons chosen. For example, if Person 6 said that he communicates with Person 10 then a '1' would appear in Row 6 and Column 10 of the grid. If Person 6 does not communicate with Person 10 then a '0' would appear at that point in the grid. Since communication and socialization are reciprocal or mutual processes it was possible to measure the extent to which a person perceived his interaction pattern in the same way that others perceived it. If, for example, Person 5 communicates with Person 6 and indicated this on the questionnaire then Person 6 should also have indicated communication with Person 5. The degree to which the individuals chosen by Person 5 are the same ones that chose Person 5 is the degree to which '5' perceives his correct position in either the communication or the social structure. Thus we have two measures of a teacher's perception of his place in the school staff structure. Another measure derived from the first two questions was the difference between the social structure and the communication structure of the school staff.

Although there were other intermediate measures, the final results will probably be more interesting to you. These take the form of three statistical profiles of teacher types. The profiles are of the male teacher, the older teacher, and the teacher with more years of teacher education. These profiles are not perfect. They apply to the 389 staff members in the 18 schools that participated as a whole. They cannot be considered valid for any one person or for any one school. For the last two profiles there is no dividing line between old and young or between more and less teacher education. The characteristics given for these profiles tend to be associated with greater age and more teacher education respectively. In the case of sex the characteristics given are associated more with men than with women. In all cases the characteristics are relative. For example, the principals were regarded as generally effective in all schools but some teachers rated him more effective than others. The relationships given in these profiles are statistically significant but not overwhelming. There will be many exceptions.

THE MALE TEACHER:

- considers the school less effective than the female teacher.
- is less satisfied with working conditions.
- is less likely to choose teaching again as a profession.
- desires a greater increase in his salary.
- considers the principal less effective.
- is younger than the average female teacher.
- has more teacher education.
- is less able to correctly perceive his position in the social and communication structures than the female teachers.

- shows a greater difference between his positions in the communication structure and social structure than female teachers.

THE OLDER TEACHER:

- considers the school more effective.
- is more satisfied with teaching conditions in the school.
- would choose teaching again as a profession.
- is relatively happy with his present salary.
- considers the principal more effective.
- is a married female.
- has considerable teaching experience and experience in the present school.
- has fewer years of teacher education.

THE TEACHER WITH MORE YEARS OF TEACHER EDUCATION:

- is a male.
- tends to misperceive his positions in both the communication structure and the social structure.
- desires a greater increase in salary.
- is less satisfied with his choice of teaching as a profession.
- is younger than average.
- considers the school to be less effective.

As you can see, the analysis of the questionnaire is not yet complete and work is continuing. The greatest contribution of this study is probably not the above profiles but the validation of the sociometric method of studying a school staff. We would like to thank you again for your time, effort, and kind cooperation in completing the questionnaire.

Yours sincerely,

E. Miklos
Associate Professor

L. M. Bezeau
Research Assistant

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1	0	0	0	1	0	1	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	1
2	1	1	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
3	0	1	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0
4	0	0	0	0	0	1	0	1	0	1	0	0	0	0	0	0	1	0	0	1	0	0
5	0	0	0	0	0	0	0	1	1	0	0	1	1	0	1	1	1	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
7	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	0	0	0	0	0
8	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
9	0	1	0	0	0	1	0	0	0	0	1	1	0	1	0	1	1	0	0	0	0	0
10	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0
11	1	0	0	1	0	1	1	1	1	1	1	0	0	0	0	1	0	0	0	1	0	1
12	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
13	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0
14	1	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	1	0	0	0	0	1
15	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0
16	1	1	0	0	1	0	0	1	0	1	1	0	1	1	0	0	0	0	0	1	0	1
17	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
19	0	0	0	0	1	0	0	0	0	1	0	0	1	0	0	0	1	0	0	0	0	1
20	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0
21	0	0	0	0	0	0	0	0	1	1	0	1	0	1	0	0	0	0	0	1	0	0
22	1	1	1	1	1	1	0	1	0	1	1	1	0	1	1	0	1	0	1	1	0	1

THE ABOVE GRID OR MATRIX IS AN EXAMPLE OF THE TYPE CONSTRUCTED FOR ALL SCHOOLS IN THE SAMPLE FOR EACH SOCIOMETRIC QUESTION (QUESTIONS 1 TO 6). IT IS AN ACTUAL COMMUNICATION MATRIX FROM ONE OF THE SCHOOLS, BUT THE ROWS HAVE BEEN INTERCHANGED. A '1' REPRESENTS A CHOICE BY THE PERSON IDENTIFIED BY THE ROW NUMBER OF THE PERSON IDENTIFIED BY THE COLUMN NUMBER. A ZERO INDICATES NO CHOICE. THIS MEANS, FOR EXAMPLE, THAT THE ONES IN ROW 10 REPRESENT THE PEOPLE CHOSEN BY '10' AND THE ONES IN COLUMN 10 REPRESENT PEOPLE THAT CHOSE '10'.

THESE MATRICES WERE NOT CONSTRUCTED BY PEOPLE BUT BY THE UNIVERSITY'S IBM 7040 COMPUTER. THE INFORMATION FROM THE QUESTIONNAIRES WAS PUNCHED ON IBM CARDS SIMILAR TO THE CARDS USED FOR TELEPHONE AND NATURAL GAS BILLS. THESE CARDS WERE READ BY THE COMPUTER WHICH THEN ANALYSED THE INFORMATION ACCORDING TO A PROGRAM, OR SET OF INSTRUCTIONS, PREPARED BY PROGRAMMERS IN THE DEPARTMENT OF EDUCATIONAL ADMINISTRATION. THE ABOVE MATRIX WAS CONSTRUCTED BY THE COMPUTER IN A FRACTION OF A SECOND. IT WAS THEN PRINTED ON PAPER BY A LINE PRINTER WHICH ALSO PRINTED THIS EXPLANATION.

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